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THE

Gardeners Dictionary.

Containing the METHODS of
CULTIVATING and IMPROVING
ALL SORTS OF
TREES, PLANTS, *and* FLOWERS,
FOR THE
Kitchen, *Fruit*, and *Pleaſure Gardens*;
AS ALSO
Thoſe which are uſed in MEDICINE.
WITH
DIRECTIONS for the Culture of VINEYARDS,
and Making of WINE, in *England*.
In which likewiſe are included
The PRACTICAL PARTS of HUSBANDRY.

Abridged from the laſt Folio Edition,
By the AUTHOR, *PHILIP MILLER*, F.R.S.
Member of the Botanic Academy at *Florence*, and Gardener to the Worſhipful
Company of APOTHECARIES, at their Botanic Garden, at *Chelſea*.

—— *Digna manet divini gloria ruris.* Virg. Geor.

In THREE VOLUMES.

VOL. III.

The FOURTH EDITION, Corrected and Enlarged.

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THE
Gardeners Dictionary.

Vol. III.

PADUS, The Bird-cherry, or Cherry-Laurel.

The *Characters* are;

The Empalement of the Flower is bell-ſhaped, conſiſting of one Leaf, which expands at the Brim, where it is ſlightly cut into five Parts: the Flower is compoſed of five roundiſh Petals, which are inſerted in the Empalement, and are ſpread open: in the Centre of the Flower is ſituated the Pointal, attended by a great Number of Stamina, *which are inſerted in the Empalement: the Pointal afterward changes to a roundiſh Berry, incloſing one oval Nut.*

The *Species* are;

1. Padus *glandulis duabus baſi foliorum ſubjectis. Lin. Hort. Cliff.* The common Bird-cherry.

2. Padus *foliis ovatis ſerratis, petiolis rectis, ſpica florum breviore.* The *Corniſh* Cherry.

3. Padus *foliis lanceolatis glabris, vix ſerratis, fructu nigro. American* Bird-cherry.

4. Padus *foliis ſempervirentibus lanceolato-ovatis. Lin. Hort. Cliff.* The common Laurel, or Cherry-bay.

5. Padus *foliis ſempervirentibus ovatis. Lin. Hort. Cliff.* The *Portugal* Laurel; by ſome called the *Portugal* Cherry; and in *Portugueſe, Acerira.*

The two firſt Species have been generally rang'd in the Genus of Cherries, till Dr. *Linnæus* ſeparated them from that Genus, and added the two laſt Species to them, and applied this Title of *Padus* to them; which is an old Name given by *Theophraſtus* to one of the Species: but the Doctor, in his laſt Edition of his Method, ſeems to join theſe to the Cherries again. But as theſe produce their Fruit in a long *Thyrſe*, or Bunch, I think they may be ſeparated from the Cherry on that Account.

The firſt Sort is very common in ſeveral Parts of *England*, but particularly in the North, where they grow in the Hedges in great Plenty. This will riſe to the Height of eighteen or twenty Feet; but generally ſends out a great Number of Shoots from the Bottom, which, if ſuffered to grow, will form a Thicket, and prevent the upright Growth of the Tree. The Branches of this Tree are generally irregular, and grow very confuſed; ſo that it is rarely ſeen to grow handſome: but when it is mixed with other Shrubs in Wilderneſs-quarters, it makes an handſome Appearance during the Seaſon of its flowering, which is commonly in the Beginning of *May*: at which time the whole Tree is cover'd with long Spikes of white Flowers; but theſe have a very ſtrong Scent, which is very diſagreeable to many Perſons; ſo there ſhould not be many of them planted too near the Habitation.

The ſecond Sort will riſe to a greater Height than the firſt, and may be trained up with a regular ſtrait Stem, to the Height of twenty Feet, with an handſome regular Head: for the Branches of this Sort are naturally diſpos'd in a regular Order. The Flowers of this Sort are produced on ſhorter Spikes than thoſe of the former Sort; but in other reſpects are very like them.

The third Sort is a Native of *America*, from whence the Seeds have been brought, and the Plants are now commonly ſold in the Nurſeries near *London*. It grows plentifully in the Woods in *Carolina*; where the Fruit is particularly eſteemed for making Cherry-brandy. This Tree is of middling Growth, and the Branches generally grow very irregular: the Leaves are very ſmooth, and of a ſhining Green: the Flowers are produced in long Cluſters, like the former Sort; but the Fruit is larger, and of a ſhining black Colour when ripe. The Leaves of this Tree remain green until *December*, unleſs hard Froſts happen early, to decay them. The Wood of this Tree is very beautifully vein'd, for which the Inhabitants of *America* greatly eſteem it.

All theſe Sorts may be propagated by laying down their young Branches in *October*, which, in one Year, will have made good Roots: or they may be grafted upon each other; as alſo upon the common Cherry-ſtock: but theſe grafted Trees never grow to the Size of thoſe which are propagated by Seeds or Layers. But they are ſeldom propagated by Seeds; becauſe the Birds generally eat them, unleſs the Fruit are ſcreened from them: and as the moſt expeditious Method of raiſing the Plants is by Layers, ſo that is generally uſed by the Gardeners near *London*.

The common Laurel is ſo well known, as to need no Deſcription; it being very common in every Garden. This Tree was brought from *Conſtantinople* about the Year 1578. and was for many Years kept in Pots and Tubs, and preſerv'd in Green-houſes in Winter: but afterward it was planted againſt warm Walls, to preſerve it; being frequently injur'd by ſevere Froſt. After this the Plants were trained into Pyramids and Globes; and conſtantly kept ſhear'd; by which the broad Leaves were generally cut in the Middle, which rendered the Plants very unſightly. Of late Years they have been more properly diſpoſed in Gardens, by planting them to border Woods, and the Sides of Wilderneſs-quarters; for which Purpoſe we have but few Plants ſo well adapted; for it will grow under the Drip of Trees, in Shade or Sun; and the Branches will ſpread to the

Ground, ſo as to form a Thicket; and the Leaves being large, and having a fine gloſſy green Colour, they ſet off the Woods and other Plantations in Winter, when the other Trees have caſt their Leaves; and in Summer they make a good Contraſt with the Green of the other Trees. This Tree is ſometimes injur'd in very ſevere Winters, eſpecially where they ſtand ſingle, and are much expoſed; but where they grow in Thickets, and are ſcreen'd by other Trees, they are ſeldom much hurt: for in thoſe Places it is only the young tender Shoots which are injur'd; and there will be new Shoots produced immediately below theſe, to ſupply their Place; ſo that in one Year the Damage will be repaired: but whenever ſuch ſevere Winters happen, theſe Trees ſhould not be cut or pruned till after the following *Midſummer*; by which time it will appear what Branches are dead, which may then be cut away, to the Places where the new Shoots are produced: for by haſtily cutting theſe Trees in the Spring, the drying Winds have free Egreſs to the Branches; whereby the Shoots ſuffer as much, as they had done by the Froſt.

Theſe Trees are alſo very ornamental, when they are mix'd with other ever-green Trees, in forming Thickets, or to ſhut out the Appearance of diſagreeable Objects: for the Leaves, being very large, make a very good Blind, and are equally uſeful for ſcreening from Winds; ſo that when they are planted between flowering Shrubs, they may be trained ſo as to fill up the Vacancies in the Middle of ſuch Plantations; and will anſwer the Purpoſe of ſcreening in the Winter, and ſhutting out the View thro' the Shrubs in all Seaſons: there are alſo many other Purpoſes to which this Tree may be applied, ſo as to render it very ornamental.

In warmer Countries this Tree will grow to a large Size; ſo that in ſome Parts of *Italy* there are large Woods of them; but we cannot hope to have them grow to ſo large Stems in *England*; for ſhould theſe Trees be pruned up, in order to form them into Stems, the Froſt would then become much more hurtful to them, than in the manner they uſually grow, with their Branches to the Ground: however, if theſe Trees are planted pretty cloſe together, in large Thickets, and permitted to grow rude, they will defend each other from the Froſt, and they will grow to a conſiderable Height: an Inſtance of which is now in that noble Plantation of ever-green Trees, made by his Grace the Duke of *Bedford*, at *Woodbourn-Abbey*; where there is a conſiderable Hill, covered intirely with Laurels: and in the other Parts of the ſame Plantation, there are great Numbers of theſe intermixed with the other ever-green Trees, where they are already grown to a conſiderable Size, and make a noble Appearance.

This Tree is commonly propagated by Cuttings, which ſhould be planted in *September*; and in taking off the Cuttings, if a Joint of the former Year's Shoot is cut to the Bottom of each, there will be no Danger of their growing: and theſe Cuttings will have much better Roots, than thoſe which have only the ſame Year's Shoot; which, being very ſoft and tender, do not put out Roots from the Bottom in the ſame manner as the others, and they frequently miſcarry. Theſe Cuttings ſhould be made about fifteen Inches long, or ſomewhat ſhorter; and they ſhould be planted ſeven or eight Inches into the Ground, obſerving to tread the

Earth down cloſe to them. Theſe Cuttings ſhould be planted in a ſoft loamy Soil, not ſo ſtrong as to detain the Wet, nor ſo light and dry as to admit the Sun and Wind eaſily to the lower Part of the Cuttings: In ſuch Soil as this, the Cuttings muſt be duly watered in the Spring, otherwiſe they will moſt of them fail: whereas, in a gentle Loam, ſcarce one in an hundred will miſcarry, and they will make much greater Progreſs. The common Method of planting theſe in the Nurſeries is, to lay out the Ground into Beds, about four Feet broad, with two Feet Alleys between them, for the Conveniency of going between them to water them in dry Weather; and in theſe Beds they plant the Cuttings about five or ſix Inches aſunder: but where there is a loamy Soil, it will be a better Method to plant the Cuttings in Rows, about a Foot or fifteen Inches aſunder, and at ſix Inches Diſtance in the Rows: in this Method the Cuttings will have more room to grow, and there will be room to hoe between them in Summer, to keep them clean from Weeds; and when they are removed, they may be taken up without injuring any of the Plants, which cannot be avoided where they are very cloſe together.

There are ſome Perſons who propagate theſe Trees from their Berries, which is certainly the beſt Way to obtain good Plants; for thoſe which come from Seeds, have a Diſpoſition to an upright Growth; whereas almoſt all thoſe which are raiſed from Cuttings, incline more to an horizontal Growth, and produce a greater Number of lateral Branches. When any Perſon is deſirous to propagate this Tree by Seeds, the Berries muſt be guarded from the Birds, otherwiſe they will devour them before they are perfectly ripe; which is ſeldom earlier than the Latter-end of *September*, or the Beginning of *October*; for they ſhould hang until the outer Pulp is quite black. When theſe Berries are gathered, they ſhould be ſown ſoon after; for when they are kept out of the Ground till Spring, they frequently miſcarry; and there will be no Hazard in ſowing them in Autumn, provided they are put in a dry Soil: and if the Winter ſhould prove ſevere, the Bed in which they are ſown is covered with rotten Tan, Straw, Peas-haulm, or any light Covering, to prevent the Froſt from penetrating of the Ground. The beſt Way will be to ſow the Berries in Rows at about ſix Inches Diſtance, and one Inch aſunder in the Rows: if Drills are made about three Inches deep, and the Berries ſcattered in them, and the Earth drawn over them, it will be a very good Method. The following Spring the Plants will appear, when they ſhould be kept clean from Weeds; and if the Seaſon ſhould prove dry, if they are duly watered, the Plants will make ſo good Progreſs, as to be fit for tranſplanting the following Autumn, when they ſhould be carefully taken up, and planted in a Nurſery, placing them in Rows at three Feet aſunder, and the Plants one Foot Diſtance in the Rows. In this Nurſery they may remain two Years; by which time they will be fit to tranſplant where they are deſigned to remain.

The beſt Seaſon for tranſplanting theſe Plants is in the Autumn, as ſoon as the Rain has prepared the Ground for Planting; for altho' they often grow, when removed in the Spring, yet thoſe do not take near ſo well, nor make ſo good Progreſs, as thoſe which are removed in the Autumn; eſpecially if the Plants are taken from a light Soil, which generally falls away from their Roots: but if they are taken up with Balls of Earth to their Roots, and removed but a ſmall Diſtance, there will be no Danger of tranſplanting them in the Spring, provided it is done before they begin to ſhoot; for as theſe Plants will ſhoot very early in the Spring, ſo if they are removed after they have ſhot, the Shoots will decay; and many times the Plants intirely fail.

There are ſome Perſons who, of late, have baniſhed theſe Plants from their Gardens, as ſuppoſing them poſſeſſed of a poiſonous Quality; becauſe the diſtilled Water has proved ſo in many Inſtances: but however the diſtilled Water may have been found deſtructive to Animals, yet from numberleſs Experiments, which have been made both of the Leaves and Fruit, it hath not appeared, that there is the leaſt hurtful Quality in either; ſo that the Whole muſt be owing to the Oil, which may be carried over in Diſtillation.

The Berries have been long uſed to put into Brandy, to make a ſort of Ratafia; and the Leaves have alſo been put into Cuſtards, to give them an agreeable Flavour: and altho' theſe have been for many Years much uſed, yet there hath been no one Inſtance of their having done the leaſt Injury: and as to the Berries, I have known them eaten in great Quantities, without Prejudice.

There are ſome Perſons who have grafted the Laurel upon Cherry-ſtocks, with Deſign to inlarge the Trees; but altho' they will take very well upon each other, yet they ſeldom make much Progreſs when either the Laurel is grafted on the Cherry, or the Cherry upon the Laurel; ſo that it is only a thing of Curioſity, attended with no real Uſe: and I would recommend to Perſons, who have this Curioſity, to graft the Laurel upon the *Corniſh* Cherry, rather than any other Sort of Stock, becauſe the Graft will unite better with this; and as it is a regular Tree, and grows large, ſo it will better anſwer the Purpoſe of producing large Trees.

The *Portugal* Laurel has not been very long cultivated in the *Engliſh* Gardens, nor is it, as yet, become common here; but it deſerves to be propagated as much as any of the ever-green Trees; for the Leaves have a moſt beautiful ſhining Verdure, and, in *June*, the Trees are covered with long Spikes of white Flowers, which, together with the bright-red Bark of the young Shoots, make a very beautiful Appearance: and in the Autumn, when the Berries ripen, they likewiſe make a goodly Shew; and what renders this Tree more valuable is, its being ſo very hardy, as to defy the ſevereſt Cold of this Country: for in the hard Froſt of the Year 1740. when almoſt every other ever-green Tree and Shrub was ſeverely pinched, theſe Trees retained their Verdure, and ſeemed to have felt no Injury.

This will grow to the Height of ten or twelve Feet in *England* (but probably, in their native Country, they may be much larger); but I have not ſeen any which are higher here: they generally ſend out their Branches near the Ground, and form large ſpreading Heads; but they may be trained up with Stems, eſpecially ſuch Plants as are produced from the Berries, which are more diſpoſed to grow upright, than thoſe which are propagated from Cuttings: therefore where the Berries can be procured in Plenty, I would recommend the propagating theſe Trees from them, rather than by the Cuttings: and as there are many Trees in *England*, which produce the Berries in plenty, ſo, if they are carefully guarded from the Birds, there may be ſoon plenty of the Berries in *England*.

Theſe Berries muſt be managed in the ſame way as hath been before directed for the common Laurel; and if it is propagated by Cuttings, they ſhould be treated in the ſame manner as the common Laurel.

This Tree delights in a gentle loamy Soil, which is not too wet, nor over-dry; tho' it will grow upon almoſt any Soil; but the Plants do not make ſo great Progreſs, nor appear ſo beautiful, when planted in a very dry Soil, or in Ground that is too wet. The time of tranſplanting this is the ſame as for the common Laurel.

PÆONIA, The Peony.

The *Characters* are;

It hath a Flower compos'd of ſeveral Leaves, which are placed orbicularly, and expand in form of a Roſe; out of whoſe Empalement riſes the Pointal, which afterward becomes a Fruit, in which ſeveral little Horns, bent downward, are gather'd, as it were, into a little Head, covered with Down, opening lengthwiſe, containing many globulous Seeds.

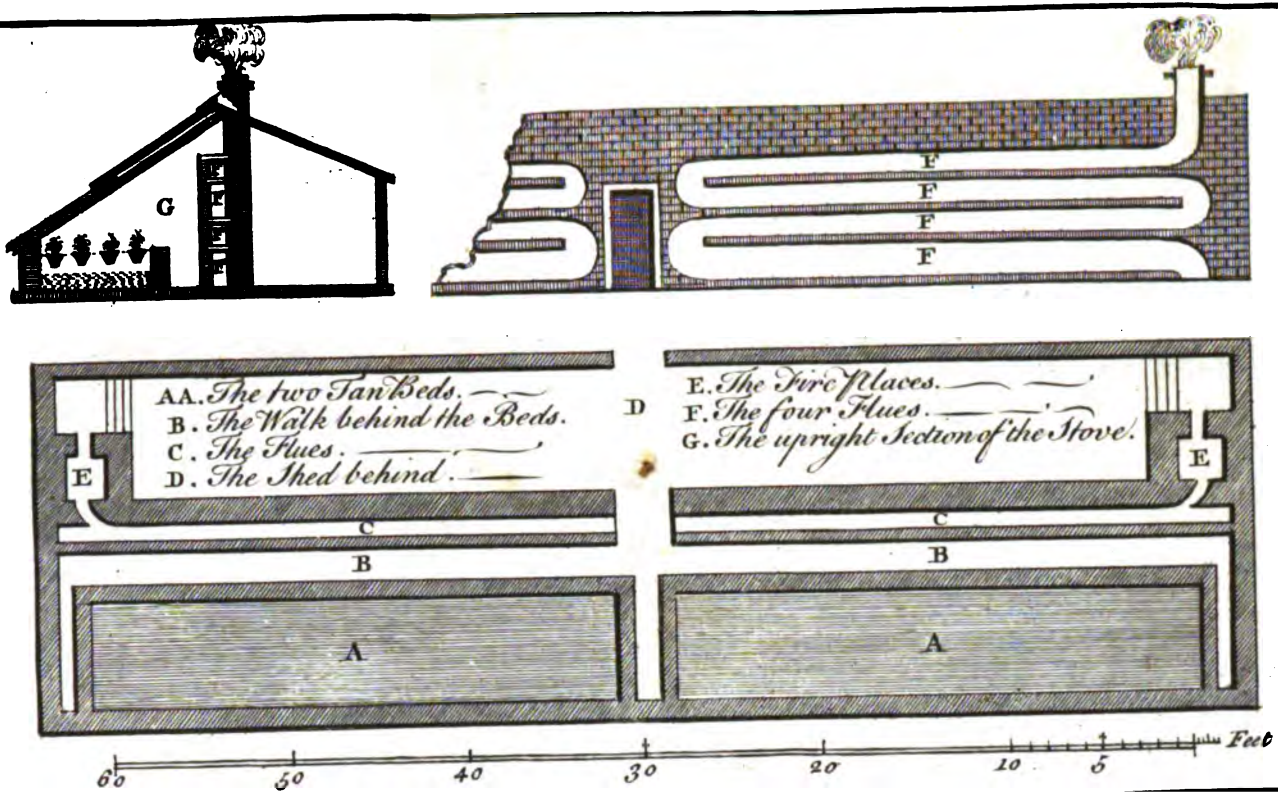
The *Species* are;

1. PÆONIA *folio nigricante ſplendido, quæ mas. C. B. P.* The Male Peony.
2. PÆONIA *mas major, flore incarnato. Hort. Eyſt.* The greater Male Peony, with a fleſh-coloured Flower.
3. PÆONIA *communis vel fœmina. C. B. P.* The Female Peony.
4. PÆONIA *fœmina, flore pleno rubro majore. C. B. P.* Female Peony, with a large double red Flower.
5. PÆONIA *pleno flore rubro, minor. J. B.* Peony with a leſſer double red Flower.
6. PÆONIA *flore exalbido pleno, major. C. B. P.* Greater Peony, with a double whitiſh Flower.
7. PÆONIA *Luſitanica, flore ſimplici odorato. Inſt. R. H. Portugal* Peony, with a ſingle ſweet-ſcented Flower.
8. PÆONIA *mas, foliorum ſegmentis amplioribus. C. B. P.* Male Peony, with Leaves having broader Segments.
9. PÆONIA *tenuius laciniata, ſubtus pubeſcens, flore purpureo. C. B. P.* Peony with narrow jagged Leaves, which are downy underneath, and a purple Flower.
10. PÆONIA *aquilinæ foliis. C. B. P.* Peony with a Columbine-leaf.
11. PÆONIA *flore variegato. C. B. P.* Peony with a ſtrip'd Flower.
12. PÆONIA *folio ſubtus incano, flore albo vel pallido. C. B. P.* Peony with Leaves hoary underneath, and white or pale Flowers.

The firſt of theſe Sorts is chiefly propagated for the Roots, which are us'd in Medicine; for the Flowers, being ſingle, do not afford near ſo much Pleaſure as thoſe with double Flowers, nor will they abide near ſo long in Beauty.

The ſecond Sort hath larger ſingle Flowers than the firſt; but they are of a paler Colour: this is preſerv'd by Perſons who are curious in collecting the various Kinds of Flowers; but is not ſo much eſteem'd as thoſe with double Flowers.

All the Sorts with double Flowers are preſerv'd in curious Gardens for the Beauty of their Flowers; which, when intermix'd with other large-growing Plants in the Borders of large Gardens, will add to the Variety; and the Flowers are very or-



AA. The two Tan Beds.
B. The Walk behind the Beds.
C. The Flues.
D. The Shed behind.

E. The Fire Places.
F. The four Flues.
G. The upright Section of the Stove.

Plate 3. before 4 P

namental in Baſins or Flower-pots, when plac'd in Rooms.

They are all extremely hardy, and will grow in almoſt any Soil or Situation, which renders them more valuable; for they will thrive under the Shade of Trees; and in ſuch Places they will continue much longer in Beauty.

They are propagated by parting their Roots, which multiply very faſt. The beſt Seaſon for tranſplanting them is toward the Latter-end of *Auguſt*, or the Beginning of *September*; for if they are remov'd after their Roots have ſhot out new Fibres, they ſeldom flower ſtrong the ſucceeding Summer.

In parting of theſe Roots, you ſhould always obſerve to preſerve a Bud upon the Crown of each Off-ſet, otherwiſe they will come to nothing; nor ſhould you divide the Roots too ſmall (eſpecially if you have regard to their blowing the following Year); for when their Off-ſets are weak, they many times don't flower the ſucceeding Summer, or at leaſt produce but one Flower upon each Root: but where you would multiply them in Quantities, you may divide them as you pleaſe, provided there be a Bud to each Off-ſet; but then they ſhould be planted in a Nurſery-bed, for a Seaſon or two, to get Strength, before they are plac'd in the Flower-garden.

The ſingle Sorts may be propagated from Seeds (which they generally produce in large Quantities, where the Flowers are permitted to remain); which ſhould be ſown in the middle of *Auguſt* upon a Bed of freſh light Earth, covering them over about half an Inch thick with the ſame light Earth: the Spring following the Plants will come up; when they ſhould be carefully cleared from Weeds, and in very dry Weather refreſh'd with Water, which will greatly forward their Growth. In this Bed they ſhould remain two Years before they are tranſplanted, obſerving in Autumn, when the Leaves are decay'd, to ſpread ſome freſh rich Earth over the Beds about an Inch thick, and conſtantly to keep them clear from Weeds.

When you tranſplant them (which ſhould be done in *September*), you muſt prepare ſome Beds of freſh light Earth, which ſhould be dug, and well clean'd from the Roots of all noxious Weeds; then plant the Roots therein ſix Inches aſunder, and about three Inches deep. In theſe Beds they may remain until they flower; after which they may be tranſplanted where you deſign they ſhould grow. It is very probable there may be ſome Varieties obtain'd from the Seeds of theſe Plants, as is common in moſt other Flowers; ſo that thoſe which produce beautiful Flowers may be plac'd in the Flower-garden; but ſuch as continue ſingle or ill-colour'd, may be planted in Beds to propagate for medicinal Uſe.

The *Portugal* Peony may alſo be propagated either by Seeds, or parting of the Roots, in the ſame manner as the other Sorts; but ſhould have a lighter Soil, and a warmer Situation. The Flowers of this Kind are ſingle; but ſmell very ſweet; which renders it worthy of a Place in every good Garden:

The four Sorts laſt-mentioned are not ſo common in the *Engliſh* Gardens at preſent, as thoſe before enumerated; but they are equally hardy, and may be propagated in the ſame manner.

PALIURUS, Chriſt's Thorn.

The *Characters* are;

It hath long ſharp Spines: the Flower conſiſts of five Leaves, which expand in form of a Roſe: out of the Flower-cup (which is divided into ſeveral

ſeveral Segments) riſes the Pointal, which becomes a Fruit ſhap'd like a Bonnet, having a Shell almoſt globular, which is divided into three Cells, in each of which is contain'd one roundiſh Seed.

We have but one *Species* of this Plant; *viz.*

Paliurus. *Dod.* Chriſt's Thorn.

This Plant is ranged in the Genus of *Rhamnus* by Dr. *Linnæus*, who has alſo joined the *Frangula* of *Tournefort*, the *Alaternus* and *Ziziphus*, to the ſame Genus; but if the Fruit of theſe Plants are admitted as a characteriſtic Note in diſtinguiſhing the *Genera*, theſe cannot be brought together.

This is by many Perſons ſuppos'd to be the Plant from which the Crown of Thorns, which was put upon the Head of our Saviour, was compos'd: the Truth of which is ſupported by many Travellers of Credit, who affirm, that it is one of the moſt common Shrubs in the Country of *Judea*; and from the Pliableneſs of its Branches, which may be eaſily wrought into any Figure; it may afford a Probability.

This Shrub grows wild in moſt Parts of the *Levant*, as alſo in *Italy*, *Spain*, *Portugal*, and the South of *France*, eſpecially near *Montpelier*, from whence their Seeds may be procured; for they do not ripen in *England*. Theſe Seeds ſhould be ſown as ſoon as poſſible, after they arrive, in a Bed of light Earth, and the Plants will come up the following Spring: but when the Seeds are kept out of the Ground till Spring, they will not come up till the next Year, and very often fail: therefore it is much the beſt way to ſow them in the Autumn. Theſe Seedling-plants may be tranſplanted the following Seaſon into a Nurſery to get Strength, before they are planted out for good.

It may alſo be propagated by laying down its tender Branches in the Spring of the Year; which, if carefully ſupply'd with Water in dry Weather, will take Root in a Year's time, and may then be taken off from the old Plants, and tranſplanted where they are to remain.

The beſt time for tranſplanting this Plant is in the Autumn, ſoon after the Leaves decay, or the Beginning of *April*, juſt before it begins to ſhoot, obſerving to lay ſome Mulch upon the Ground about their Roots to prevent them from drying, as alſo to refreſh them now-and-then with a little Water, until they have taken freſh Root, after which they will require but very little Care. They are very hardy, and will grow to be ten or twelve Feet high, if planted in a dry Soil, and a warm Situation. There is little Beauty in this Plant; but it is kept in Gardens as a Curioſity.

PALMA, The Palm-tree.

The *Characters* are;

It hath a ſingle unbranch'd Stalk: the Leaves are diſpos'd in a circular Form on the Top, which when they wither, or fall off with Age, new ones always ariſe out of the middle of the remaining ones; among which, certain Sheaths or Spikes break forth, opening from the Bottom to the Top, very full of Flowers, and Cluſters of Embryoes.

The *Species* are;

1. Palma *major*. C. B. P. The greater Palm, or Date-tree.

2. Palma *minor*. C. B. P. The Dwarf Palm, with prickly Footſtalks.

3. Palma *Braſilienſis prunifera, folio plicatili ſeu flabelliformi, caudice ſquamato. Raii Hiſt.* The Palmetto-tree.

4. Palma *altiſſima non ſpinoſa, fructu pruniformi minore racemoſo ſparſo. Sloan. Cat.* The Cabbage-tree.

5. Palma *foliorum pediculis ſpinoſis, fructu pruniformi luteo oleoſo. Sloan. Cat.* The oily Palm-tree.

6. Palma *tota ſpinoſa major, fructu pruniformi. Sloan. Cat.* The great Macaw-tree.

7. Palma *humilis dactylifera, radice repentiſſima ſobolifera, folio flabelliformi, pedunculo vix ſpinoſo. Boerh. Ind.* The Dwarf Palm, with ſcarce any Prickles upon the Footſtalks.

8. Palma *foliis longiſſimis pendulis, abſque ullo pedunculo ex caudice glabro enatis. Boerh. Ind.* The Dragon-tree.

9. Palma *Japonica, ſpinoſis pediculis, polypodii folio. Par. Bat.* The Palm-tree from *Japan,* with prickly Footſtalks, and a Leaf like Polypody.

10. Palma *cujus fructus ſeſſilis Fauſel dicitur. C. B. P.* The Palm-tree, whoſe Fruit is called Fauſel.

11. Palma *altiſſima non ſpinoſa, fructu oblongo. Houſt.* The talleſt ſmooth Palm-tree, with oblong Fruit, called Mountain Cabbage.

12. Palma *coccifera, complicato folio, fructu minore. H. L.* The nut-bearing Palm, with a folded Leaf, and ſmaller Fruit.

13. Palma *Malabarica, floſculis ſtellatis, fructu longo ſquamato. Plum.* Palm-tree of *Malabar,* with ſmall ſtarry Flowers, and a long ſcaly Fruit.

14. Palma *dactylifera, fructu acerrimo. Plum.* Date-bearing Palm-tree, with a ſharp Fruit.

15. Palma *montana Malabarica, folio magno complicato acuto, flore albo racemoſo, fructu rotundo. Plum.* Mountain Palm-tree of *Malabar,* with a large ſharp folded Leaf, white Flowers growing in Bunches, and a round Fruit.

16. Palma *prunifera Japonenſis. H. L. B.* Plum-bearing Palm of *Japan.*

17. Palma *dactylifera & vinifera. Plum.* Date and wine-bearing Palm-tree.

18. Palma *dactylifera aculeata minima. Plum.* The leaſt prickly date-bearing Palm-tree.

19. Palma *coccifera, coſtarum lateribus aculeatis. Plum.* Nut-bearing Palm-tree, with Spines growing on the Stalks.

20. Palma *dactylifera latifolia. Plum.* Broad-leav'd date-bearing Palm-tree.

21. Palma *Indica coccifera anguloſa. C. B. P.* The Cocoa-nut, *vulgo.*

The tenth Sort here mentioned is a Native of the *Eaſt-Indies*: the Fruit of this Kind is directed by the College of Phyſicians to be uſed in Medicine; but it is rarely brought to *England.* The eleventh Sort was diſcovered by the late Dr. *Houſtoun,* growing on the Hills near *La Vera Cruz:* the Fruit of this Kind is about an Inch and an half in Length, and near two Inches in Circumference. The Flower-buds, which are produced in the Centre of the Plants, are by the Natives cut, and boiled to eat with their Meat, and are by them call'd the Mountain Cabbage.

The twelfth Sort grows plentifully in ſeveral Parts of the *Spaniſh Weſt-Indies,* from whence I have received the Fruit. Theſe Fruit are ſhap'd exactly like the Cocoa-nut, and are incloſ'd in a Shell in the ſame manner as that; but theſe are not ſo large as a Man's Fiſt, whereas the Cocoa-nuts are larger than a Man's Head.

The thirteenth, fourteenth, ſixteenth, ſeventeenth, eighteenth, and nineteenth Sorts grow in ſeveral Places in the *Eaſt* and *Weſt-Indies*; for by the ſeveral Writers they are mentioned to grow in the *Eaſt*, and I have receiv'd Fruit of all theſe Sorts from the *Weſt-Indies*.

Theſe Plants may be eaſily produced from the Seeds (provided they are freſh); which ſhould be ſown in Pots fill'd with light rich Earth, and plunged into an Hot-bed of Tanners Bark; which ſhould be kept in a moderate Temper, and the Earth frequently refreſh'd with Water.

When the Plants are come up, they ſhould be each planted into a ſeparate ſmall Pot fill'd with the ſame light rich Earth, and plunged into an Hot-bed again, obſerving to refreſh them with Water, as alſo to let them have Air in proportion to the Warmth of the Seaſon, and the Bed in which they are placed. During the Summer-time they ſhould remain in the ſame Hot-bed; but in *Auguſt* you ſhould let them have a great Share of Air to harden them againſt the Approach of Winter; for if they are too much forc'd, they will be ſo tender as not to be preſerv'd thro' the Winter without much Difficulty, eſpecially if you have not the Conveniency of a Bark ſtove to keep them in.

The Beginning of *October* you muſt remove the Plants into the Stove, placing them where they may have a great Share of Heat (theſe being ſomewhat tenderer, while young, than after they have acquir'd ſome Strength); tho' indeed they may be ſometimes preſerv'd alive in a cooler Situation, yet their Progreſs would be ſo much retarded, as not to recover their Vigour the ſucceeding Summer. Nor is it worth the Trouble of raiſing theſe Plants from Seeds, where a Perſon has not the Conveniency of a good Stove to forward their Growth; for where this is wanting, they will not grow to any tolerable Size in eight or ten Years.

Whenever theſe Plants are remov'd (which ſhould be done once a Year), you muſt be very careful not to cut or injure their large Roots, which is very hurtful to them; but you ſhould clear off all the ſmall Fibres which are inclinable to Mouldineſs; for if theſe are left on, they will in time decay, and hinder the freſh Fibres from coming out, which will greatly retard the Growth of the Plants.

The Soil in which theſe Plants ſhould be planted, muſt be compoſed in the following manner; *viz*. A third Part of freſh light Earth taken from Paſture-ground; a third Part Sea-ſand; and the other Part rotten Dung, or Tanners Bark: theſe ſhould be carefully mixed, and laid in an Heap three or four Months at leaſt before it is uſed; but ſhould be often turn'd over, to prevent the Growth of Weeds, and to ſweeten the Earth.

You ſhould alſo obſerve to allow them Pots proportionable to the Sizes of the Plants; but you muſt never let them be too large, which is of worſe Conſequence than if they are too ſmall. During the Summer-ſeaſon they ſhould be frequently refreſhed with Water; but you muſt be careful not to give it in too great Quantities; and in Winter they muſt be now-and-then refreſhed, eſpecially if they are placed in a warm Stove; otherwiſe they will require very little Water at that Seaſon.

Theſe Plants are moſt of them very ſlow Growers, even in their native Countries, notwithſtanding they arrive to a great Magnitude; for it has been often obſerved by ſeveral

veral of the old Inhabitants of thoſe Countries, that the Plants of ſome of theſe Kinds have not advanced two Feet in Height in twenty Years; ſo that when they are brought into theſe Countries, it can't be expected they ſhould advance very faſt, eſpecially where there is not due Care taken to preſerve them warm in Winter: but however ſlow of Growth theſe Plants are in their native Countries, yet they may be with us greatly forwarded, by placeing the Pots into an Hot-bed of Tanners Bark; which ſhould be renewed as often as is neceſſary, and the Plants always preſerved therein both Winter and Summer, obſerving to ſhift them into larger Pots as they advance in Growth, as alſo to ſupply them with Water: in which Management I have had ſeveral of them come on very faſt; for I obſerve the Roots of theſe Plants are very apt to root into the Bark, if their Pots remain a conſiderable time without ſhifting, where they meet with a gentle Warmth; and the Moiſture ariſing from the Fermentation of the Bark doth preſerve their Fibres plump and vigorous.

The Date-palm is of very ſlow Growth with us; but is eaſily produced from Seeds taken out of the Fruit, which are brought into *England* in great Plenty; but there are very few of theſe Plants of any conſiderable Size at preſent in the *Engliſh* Gardens.

The Dwarf Palm, with prickly Footſtalks, as alſo that with few Prickles, are of humble Growth in their native Countries, ſeldom riſing above four or five Feet high; but extend their Roots very far, and increaſe thereby in the ſame manner as the common Fern doth; ſo that the waſte Ground, which is not cultivated, is over-run with the Plants; the Leaves of which the Inhabitants cut, and ſend into theſe Countries to make Flag-brooms. Theſe grow in *Spain*, *Portugal*, and *Italy*; and are much hardier than any of the other Sorts.

The Palmetto-tree is brought from the *Weſt-Indies*, where it grows to be a very large Tree; the Leaves of which the Inhabitants thatch their Houſes withal; for which Purpoſe they are very uſeful in thoſe Countries. The Leaves, before they are expanded, are cut, and brought into *England* to make Womens plaited Hats, which were, a few Years ſince, greatly in Faſhion; and the Berries of theſe Trees were formerly much in Uſe in *England* for Buttons. Theſe were ſome of the chief Commodities which the *Bermuda-Iſlands* did afford for Manufactory; but, at preſent, they are both diſus'd in *England*.

The Cabbage-tree is very common in the *Caribbee-Iſlands*, where it grows to a prodigious Height: *Ligon*, in his *Hiſtory of Barbudos*, ſays, There are ſome of theſe Trees above two hundred Feet high, and that it is commonly an hundred Years before they arrive at Maturity enough to produce Fruit: the Leaves of this Tree envelope each other; ſo that thoſe which are incloſ'd, being deprived of the Air, are blanch'd, which is the Part the Inhabitants cut for Plait for Hats, &c. and the *Gemmæ*, or young Shoots, are pickled, and ſent into *England*, by the Name of *Cabbage*: but whenever this Part is cut out, the Trees are deſtroyed; nor do they riſe again from the old Roots; ſo that there are very few Trees left remaining near Plantations, except for Ornament; for their Stems being exceeding ſtrait, and their Leaves being produced very regularly at Top, afford a moſt beautiful Proſpect; for which Reaſon the Planters generally ſpare two or three of them near their Habitations.

The oily Palm grows in great Plenty on the Coaſt of *Guiney*, as alſo on *Cape Verd* Iſland, where they grow as high as the Main-maſt of a Ship: but theſe Trees have been tranſplanted to *Jamaica* and *Barbades*, in both which Places they thrive very well. The Inhabitants make an Oil from the Pulp of the Fruit, and draw a Wine from the Body of the Trees, which inebriates; and with the Rind of theſe Trees they make Mats to lie upon. This Sort will eaſily riſe from Seeds; and, if kept warm, will grow much faſter than the Date-palm.

The Macaw-tree is very common in the *Caribbee-Iſlands*, where the *Negroes* pierce the tender Fruit, from whence flows out a pleaſant Liquor, of which they are very fond; and the Body of the Tree affords a ſolid Timber, with which they make Javelins, Arrows, *&c.* and is by ſome ſuppoſed to be a ſort of Ebony. This Tree grows very ſlow, and requires to be kept very warm in Winter.

The Dragon-tree is very common in the *Madeira*'s, and the *Canary-Iſlands*, where they grow to be large Trees; from the Bodies of which it is ſuppoſed the Dragon's Blood doth flow. This Plant ariſes very eaſily from the Seeds; and, when it has acquired ſome Strength, is pretty hardy.

The *Japan* Palm-tree is, at preſent, very rare in *England*, being only in two or three curious Gardens: it will come up from Seeds, if they are freſh: but the Plants muſt be kept very warm, eſpecially while young, otherwiſe they will not live thro' our Winters.

The Cocoa-nut is cultivated in moſt of the inhabited Parts of the *Eaſt* and *Weſt-Indies*; but is ſuppoſed a Native of the *Maldives*, and the deſart Iſlands of the *Eaſt-Indies*: from whence it is ſuppoſed it hath been tranſported to all the warm Parts of *America*; for it is not found in any of the inland Parts, nor any-where far diſtant from Settlements. It is one of the moſt uſeful Trees to the Inhabitants of *America*, who have many of the common Neceſſaries of Life from it. The Bark of the Nut is made into Cordage, the Shell of the Nut into Drinking-bowls; the Kernel of the Nut affords them a wholſome Food; and the Milk contained in the Shell, a cooling Liquor. The Leaves of the Trees are uſed for thatching their Houſes, and are alſo wrought into Baſkets, and moſt other things which are made of Oſiers in *Europe*.

This Tree is propagated by planting of the Nuts, which in ſix Weeks or two Months after planting will come up, provided they are freſh, and thoroughly ripe, which is what few of them are, which are brought to *England*; for they always gather them before they are ripe, that they may keep during their Paſſage: ſo that the beſt Way to bring the Nuts to *England* for Planting, would be to take ſuch of them as are fully ripe, and put them up in dry Sand in a Tub, where the Vermin may not come to them; and theſe will often ſprout in their Paſſage, which will be an Advantage, becauſe then they may be immediately planted in Pots of Earth, and plunged into the Bark-bed.

Theſe Plants in the hot Iſlands of *America* make conſiderable Progreſs in their Growth; in which Places there are ſome Trees of very great Magnitude: but in *Europe* this Plant is of much ſlower Growth, being many Years before it advances to any conſiderable Height: but as the young Leaves of theſe Plants are pretty large, they make a good Appearance amongſt other tender Exotic Plants, in one or two Years time. This Plant is preſerved in ſome curious Gardens in *England*, for Variety, where it muſt be placed in the Bark-ſtove, and managed as hath been directed for the other Kinds of Palms; obſerving, as often as they are tranſplanted, not to cut their ſtrong Roots; which is generally Death to moſt of the Palm-kind. Theſe Plants muſt not be too much confined in their Roots; for if they are, they will make but little Progreſs: therefore, when the young Plants have filled the Pots with their Roots, they ſhould be ſhifted into Tubs of a moderate Size, that their Roots may have room to extend: but theſe Tubs muſt be kept conſtantly plunged into the Bark-bed, otherwiſe the Plants will not thrive. The Method of raiſing theſe Plants from the Nuts, when they are planted before they have ſprouted, is fully deſcribed under the Article of raiſing Exotic Seeds.

All the Sorts of Palm-trees are Male and Female, in different Trees; and it hath been always ſuppoſed neceſſary, that the two ſhould grow near each other, that the Male Tree might impregnate the Female, in order to render the Female fruitful: and where it has ſo happened, that a Female Tree grew ſingly, it has been aſſerted, that the Inhabitants have carried Branches of the Male Flowers, taken from Trees which grew at a Diſtance, and have faſtened them to the Female Trees, without which they have inſiſted, that the Female Trees would not produce any Fruit: but this is refuted by Father *Labat*, who affirms that he knew a ſingle Tree of the date-bearing Palm, which grew by the Side of an antient Convent in *Martinico*, which produc'd a large Quantity of fair Fruit annually; tho' there was not any other Palm-tree which grew within two Leagues of this: but he alſo affirms, that the Stones of theſe Dates would not grow; for they had planted many of them for ſeveral Years ſucceſſively, without ever raiſing a ſingle Plant; and were afterwards obliged to procure ſome Dates from *Barbary*, in order to propagate them: ſo that he conjectured, that all the Female Trees may produce Fruit, which may appear very fair to the Eye; but, upon Examination, they will be found to want the Germ or Bud, which is the Embryo of the future Plant.

This may account for the Fruit of the different Sorts of Palms not growing when they are brought to *England*; for if they are gathered from a Tree growing ſingly, having no Male Tree near it to impregnate the Ovary, it may be the true Cauſe why they do not ſucceed: therefore thoſe Perſons who collect theſe Fruit to propagate them, ſhould always obſerve to take them from ſuch Trees as grow in the Neighbourhood of the Male.

All the Sorts of Palms are worthy of being preſerved by thoſe who are curious in maintaining Exotic Plants, for the ſingular Structure of their Parts, and Beauty of their Leaves, which make an agreeable Variety amongſt other curious Plants.

PANCRATIUM, Sea-daffodil.

The *Characters* are;

It hath a tubulous lily-ſhaped Flower, conſiſting of one Leaf, which is deeply cut into ſix Parts: in the Middle is a Cup, which is bell-ſhaped and ſix-cornered, having a Chive proceeding from each Corner; and is joined thereto as a Part of the Cup, being of the ſame Colour at Bottom; but the

Part immediately under the Apex *is green: in the Centre riſes the Pointal, which extends beyond the Chives: the Empalement afterward becomes a roundiſh Fruit, which is triangular, and divided into three Parts, containing many flat or roundiſh Seeds.*

The *Species* are;

1. Pancratium *Monſpeſulanum, multis Scilla alba parva. J. B.* Sea-daffodil of *Montpelier*, by many called, The leſſer-white Squill.
2. Pancratium *floribus rubris. Lob. Pan.* Sea-daffodil with red Flowers.
3. Pancratium *Illyricum, floribus albis.* Sea-daffodil of *Illyricum*, commonly called, The third Narciſſus of *Matthiolus*.
4. Pancratium *Americanum, floribus niveis, odore balſami Peruviani. American* Sea-daffodil, with ſnowy Flowers, ſmelling like the Balſam of *Peru*.
5. Pancratium *Americanum, foliis latiſſimis, floribus niveis majoribus, odore balſami Peruviani. American* Sea-daffodil, with very broad Leaves, and large ſnowy Flowers, ſmelling like the Balſam of *Peru*.
6. Pancratium *alterum vernum Indicum. J. B.* Another *Indian* Sea-daffodil of the Spring.
7. Pancratium *Zeylanicum, flore albo odorato.* Sea-daffodil of *Ceylon*, with white ſweet-ſmelling Flowers.

The firſt Sort is very common on the Sea-coaſts of the *Mediterranean*, where it grows in the Sands: it alſo grows plentifully on the Sea-ſhore at *Minorca*; from whence I have received the Roots and Seeds: this Sort flowers in *England* the Beginning of *Auguſt*; and the green Leaves remain all the Winter; ſo that the beſt time to tranſplant the Roots is in the Spring, as ſoon as the Leaves decay: but this Sort ſhould not be often removed; for that will prevent their Flowering.

The ſecond is a Variety of the firſt, differing only in the Colour of its Flower.

The third Sort grows plentifully on the Sands near *Naples*, and in *Sicily*; as alſo in ſeveral Iſlands of the *Archipelago*, but particularly in *Zant*, where all the Ditches are ſtored with it.

Theſe Plants are very hardy in reſpect to Cold, and may be propagated by Off-ſets from the Roots; for tho' the third Sort will produce ripe Seeds in *England*, yet, as the Seedling-plants are many Years before they come to flower, they are ſeldom propagated that way. Theſe Roots ſhould be tranſplanted in *July*, after the Leaves and Flower-ſtems are decayed: they ſhould be planted in an Eaſt Border, where they will thrive very well, and continue longer in Flower, than when they are more expoſed to the Sun: but in every other reſpect they may be treated as hath been directed for the better Sort of Narciſſus.

The other four Sorts are very tender, and will not live in *England*, unleſs they are preſerved in the warmeſt Stoves. Theſe may be procured from the Countries of their natural Growth, from whence their Bulbs may be eaſily brought, if they are taken out of the Ground when their Leaves begin to decay; and after drying them in the Shade, they ſhould be put up in Nets or Bags, and hung up, that the Vermin may not come to them.

The fourth Sort is very common in *Jamaica*, and moſt of the Iſlands of *America*. The fifth Sort was brought from the *Bahama-Iſlands*. The ſixth is very common in the *Spaniſh Weſt-Indies*: and the ſeventh is a Native of the Iſland of *Ceylon*.

All theſe Plants increaſe by Off-ſets from their Roots, and flower ex-

extremely well, if they are planted in Pots filled with light rich Earth, and plunged into the Bark-bed in the Stove, and managed as hath been directed for the tender Sorts of Amaryllis.

PANSIES. *Vide* Viola Tricolor.

PANICUM, Panic.

The *Characters* are;

It is a Plant of the Millet-kind, differing from that, by the Diſpoſition of the Flowers and Seeds; which, of this, grow in a cloſe thick Spike.

The *Species* are;

1. Panicum *Germanicum, ſive panicula minore flava. C.B.P.* Yellow *German* Panic, with a ſmaller Spike.
2. Panicum *Germanicum, ſive panicula minore alba. C. B. P.* White *German* Panic, with a ſmaller Spike.
3. Panicum *Germanicum, ſive panicula minore purpurea. C. B. P.* Purple *German* Panic, with a ſmaller Spike.
4. Panicum *Italicum, ſive panicula majore. C. B. P. Italian* Panic, with a larger Spike.
5. Panicum *Indicum, ſpica obtuſa cærulea. C. B. P. Indian* Panic, with a blue obtuſe Spike.
6. Panicum *Indicum, ſpica longiſſima. C. B. P. Indian* Panic, with a very long Spike.
7. Panicum *Americanum, ſpica obtuſa brevi. Inſt. R. H. American* Panic, with a ſhort obtuſe Spike.
8. Panicum *Americanum, ſpica longiore acuta. Inſt. R. H. American* Panic, with a longer-pointed Spike.
9. Panicum *Indicum altiſſimum, ſpicis ſimplicibus mollibus, in foliorum alis longiſſimis pediculis inſidentibus. Inſt. R. H.* The talleſt *Indian* Panic, with a ſoft ſingle Spike, which is produced on a long Footſtalk from the Wing of the Leaf.

The three firſt Sorts are only Varieties, which differ in the Colour of the Grain. Theſe are ſowed in ſeveral Parts of *Europe*, in the Fields, as Corn, for the Suſtenance of the Inhabitants: but it is reckoned not to afford ſo good Nouriſhment as Millet; however, it is frequently uſed in ſome Parts of *Germany*, to make Puddens, Cakes, and Bread. This is not ſo much eſteemed as the *Italian* Sort; but as it will ripen better in cold Countries than that, it is generally cultivated where a better Sort of Grain will not ſucceed.

The Seeds of theſe Sorts may be ſown in the Spring, at the ſame time as Barley is ſown, and may be managed exactly in the ſame Way: but this ſhould not be ſown too thick; for theſe Seeds are very ſmall, and the Plants grow ſtronger; therefore require more room. The *German* Sort doth not grow above three Feet high, unleſs it is ſown on very rich Land; in which Caſe it will riſe to be four Feet high; but the Leaves and Stems of this Corn are very large; ſo require to ſtand four or five Inches apart; otherwiſe they will grow up weak, and come to little. Theſe large-growing Corns ſhould be ſown in Drills at about eighteen Inches apart, ſo that the Ground may be hoed between the Rows of Corn, to keep them clear from Weeds; and the ſtirring of the Ground will greatly improve the Corn. In *July* the Corn will ripen, when it may be cut down and dried; and then ſhould be houſed.

The *Italian* Panic grows much larger than the *German*, and produces much larger Spikes; ſo this ſhould be allowed more room to grow, otherwiſe it will come to little. This is alſo later before it ripens; ſo it is not very proper for cold Countries.

The other Sorts are Natives of very warm Countries, where they are uſed by the Inhabitatns to make

Bread. Theſe grow very large, and require a good Summer, otherwiſe they will not ripen in this Country. The Seeds of theſe Kinds ſhould be ſown the Latter-end of *March*, or the Beginning of *April*, on a Bed of light rich Earth, in a warm Situation. They ſhould be ſown in Drills about three Feet aſunder; and when the Plants come up, they muſt be kept clear from Weeds, and thinned where they are too cloſe. When the Plants are grown pretty tall, they ſhould be ſupported by Stakes, otherwiſe the Winds will break them down: and when the Corn begins to ripen, the Birds muſt be kept from it, otherwiſe they will ſoon deſtroy it. Theſe Sorts are preſerved in ſome curious Gardens for the ſake of Variety; but they are not worth cultivating for Uſe in *England*.

PAPAVER, Poppy.

The *Characters* are;

The Flower, for the moſt part, conſiſts of four Leaves, which are placed orbicularly, and expand in form of a Roſe; out of whoſe Flower-cup (which conſiſts of two Leaves) riſes the Pointal, which afterward becomes the Fruit or Pod, which is oval or oblong, and adorned with a little Head; under which, in ſome Species, is open'd a Series of Holes quite round, into the Cavity of the Fruit, which is defended lengthwiſe with various Leaves or Plates; to which a great Number of very ſmall Seeds adhere.

The *Species* are;

1. PAPAVER *hortenſe, ſemine albo, ſativum Dioſcoridis, album Plinio. C. B. P.* Garden Poppy, with white Seeds.

2. PAPAVER *hortenſe, ſemine nigro, ſylveſtre Dioſcoridis, nigrum Plinio. C. B. P.* Garden Poppy, with black Seeds.

3. PAPAVER *flore pleno, rubrum. Hort. Eyſt.* Double red Poppy.

4. PAPAVER *flore pleno, album. C. B. P.* Double white Poppy.

5. PAPAVER *flore pleno purpureo. C. B. P.* Double purple Poppy.

6. PAPAVER *pleno flore, nigrum. C. B. P.* Black double-flower'd Poppy.

7. PAPAVER *laciniatis floribus. C. B. P.* Poppy with jagged Flowers.

8. PAPAVER *flore pleno laciniato eleganter ſtriato. Hort. Ed.* Double jagged Poppy, with beautiful ſtriped Flowers.

9. PAPAVER *Orientale hirſutiſſimum, flore magno. Tourn. Cor.* Very rough oriental Poppy, with a large Flower.

10. PAPAVER *erraticum majus, ῥοιὰς Dioſcoridi, Plinio, Theophraſto. C. B. P.* Red Poppy, or Corn-roſe.

11. PAPAVER *erraticum majus, foliis florum variegatis. H. R. Par.* Great wild Poppy, whoſe Flower-leaves are variegated.

12. PAPAVER *erraticum, flore pleno. C. B. P.* Double wild Poppy, commonly called, The Dwarf Poppy.

13. PAPAVER *erraticum, flore pleno miniato. H. R. Par.* Wild Poppy, with a double vermilion-colour'd Flower.

14. PAPAVER *erraticum, flore pleno igneo. H. R. Par.* Wild Poppy, with a double firy Flower.

15. PAPAEVR *erraticum, flore pleno igneo, marginibus candidis. H. L.* Wild Poppy, with a double firy Flower, edged with White.

16. PAPAVER *erraticum, flore pleno phœniceo, unguibus albis. H. R. Par.* Wild Poppy, with a double purple Flower, and white Bottom.

17. PAPAVER *erraticum minus. C. B. P.* Leſſer wild Poppy, or Dwarf Poppy.

18. PAPAVER *luteum perenne, laciniato folio, Cambro-Britannicum.*

Raii Syn. *Welſh*, or Yellow wild Baſtard Poppy.

The firſt Sort is cultivated in Gardens for medicinal Uſe, and is by ſome ſuppoſed to be the Plant from whence the *Opium* is procured: of this there are ſeveral Varieties, which chiefly differ in the Colour of their Flowers; but they are no more than ſeminal Variations; and therefore not worth enumerating in this Place.

The black Poppy grows wild in divers Parts of *England:* the Seeds of this Kind are ſold to feed Birds, by the Name of Maw-ſeed. Of this Sort there are a vaſt Number of Varieties; ſome of which produce exceeding large double Flowers of various Colours, and beautifully ſtrip'd: but theſe are apt to vary from Seed; therefore you ſhould never ſave the Seeds of any ſuch as are not very double, and well-colour'd; from which you may always expect to have good Sorts produce.

The Oriental Poppy is an abiding Plant, which produces a large ſingle Flower in *May*, which makes a beautiful Appearance: this may be propagated from Seeds, or by parting their Roots: the beſt time to tranſplant them is at *Michaelmas:* this muſt have a light Soil, and a warm Situation.

The red Poppy, or Corn-roſe, is never propagated in Gardens; but is very common upon chalky dry Soils in almoſt every Part of *England*, where the Plants come up amongſt the Corn, and are very troubleſome: the Flowers of this Kind are brought into the Markets for medicinal Uſe. There are many Varieties of this Plant with double Flowers, which are cultivated in the Flower-garden; but eſpecially the Dwarf Sort, of which there are ſome with very double Flowers, which are beautifully edged with White: theſe are by many Perſons ſown for Edgings to the large Borders of the Pleaſure-garden; tho' I think them noways proper for this, ſince their Flowers are but of a ſhort Duration; and the Plants, when their Seeds are perfected, immediately decay; ſo that they appear unſightly: beſides, where they grow very cloſe, the Flowers are generally ſmall: but if they are ſown in Patches upon the Borders, and, when the Plants come up, are thinned out, ſo as to leave but three or four in each Place, they will flower very well, and look very beautifully.

All the Sorts of Poppies ſhould be ſown in Autumn; for, when they are ſown in the Spring, the Plants have not time enough to get Strength before the hot Weather cauſes them to run up to flower; ſo that their Flowers are never ſo large or double as thoſe ſown in Autumn. When the Plants come up, they ſhould be carefully cleared from Weeds, which is all the Culture they require, except to pull them up where they are too thick; for they thrive better when they are ſuffered to remain where they were ſown, than if they were tranſplanted: but you ſhould obſerve to let them have room in proportion to the Growth of the Plants. The Sort firſt-mentioned grows very large and tall; therefore ſhould be not cloſer than eight or ten Inches: but the black Sort may ſtand ſomewhat nearer; tho' this appears handſomer when the Plants ſtand ſingle; therefore it is the better way to ſcatter the Seeds of thoſe which have beautiful Flowers very thin over the Borders of the Flower-garden: and, when the Plants come up, they may be pulled out where they are not well ſituated, leaving here-and-there a Plant, as the other Flowers in the Borders will admit; where, at the Seaſon of their Flowering, they will make a pretty Variety amongſt the Flowers: but they are of ſhort Duration; and having an ill Scent, they are leſs eſteemed of late Years, ſince the Plenty of other more valuable Flowers.

PAPAVER CORNICULATUM. *Vide* Glaucium.

PAPAVER SPINOSUM. *Vide* Argemone.

PAPAYA, Papaw-tree.

The *Characters* are;

It hath a ſimple Stalk: the Flowers are Male and Female in different Plants: the Male Flowers (which are barren) are tubulous, conſiſting of one Leaf, and expand in the Form of a Star: the Female Flowers conſiſt of ſeveral Leaves, which expand in form of a Roſe, out of whoſe Flower-cup riſes the Pointal, which afterward becomes a fleſhy Fruit, ſhaped like a Cucumber or Melon, containing many ſmall oblong furrow'd Seeds.

The *Species* are;

1. PAPAYA *fructu melopeponis effigie. Plum.* The Female Papaw-tree, bearing a Fruit like the Melopepo.

2. PAPAYA *fructu maximo, peponis effigie. Plum.* The Female Papaw-tree, bearing a Fruit like the Pumkin.

3. PAPAYA *mas. Boerh Ind.* The Male Papaw-tree.

Theſe Plants are very common in the *Caribbee Iſlands*, where they ariſe from Seeds, and will produce Fruit in eight or ten Months after.

The Fruit is cut before it is ripe, and afterwards ſliced, and ſoak'd in Water until the milky Juice be out, and then boil'd and eaten as Turneps, or baked as Apples; and when ripe, it is eaten as Melons, with Pepper and Sugar, by the Inhabitants of thoſe Countries.

The Flowers of the Male Sort, as alſo the Fruit of the Female, are preſerved, and ſent over as a Sweetmeat to *Europe*, and are ſaid to be very cooling and cordial.

In *England* theſe Plants are preſerved as Curioſities, by ſuch as delight in Exotics: they are eaſily raiſed from the Seeds (which are generally brought from the *Weſt-Indies* in plenty every Year), which ſhould be ſown upon an Hot-bed in *February* or *March*; and when the Plants are come up, they ſhould be planted each in a ſeparate ſmall Pot fill'd with rich light Earth, and plunged into a moderate Hot-bed of Tanners Bark, obſerving to water and ſhade them until they have taken Root; after which, you ſhould let them have Air in proportion to the Warmth of the Seaſon, by raiſing the Glaſſes with Bricks, *&c.* and you muſt often refreſh them with Water.

When the Plants have grown ſo as to fill the Pots with their Roots, they muſt be ſhaken out of them, preſerving the Earth as intire as poſſible to their Roots, and placed in larger Pots; which ſhould be filled with the ſame light Earth, and plunged again into the Hot-bed; obſerving to give them Air and Water, as was before directed: and thus from time to time, as the Plants increaſe their Stature, you ſhould ſhift them into larger Pots, which will cauſe them to be very ſtrong; and if you keep them in the Hot-bed all the Summer, and give them due Attendance, they will riſe to ſix or ſeven Feet high before Winter.

In *October* they ſhould be placed into a new Hot-bed in the Bark-ſtove with other tender Exotic Plants, where, during the Winter-ſeaſon, they muſt be carefully look'd after, to water and cleanſe them well from Vermin and Filth; and the Stove ſhould be kept nearly to the Anana's Heat, as mark'd on the Botanic Thermometers, in which they will thrive, and retain their beautiful large Leaves all the Winter: and the Male Sort will continue to produce freſh Flowers all that Seaſon, provided you do not keep them too dry. The ſecond Year the Female Sort will flower, and, if duly attended, will perfect the Fruit the following Spring.

Theſe Plants make a very beautiful Appearance (when grow large) amongſt other Exotics in the Stove, and deſerve a Place in every Collection of rare Plants.

PARIETARIA, Pellitory.

The *Characters* are;

It hath an apetalous Flower, whoſe Flower-cup is divided into four Parts; which is ſometimes bell-ſhaped, and at other times ſhaped like a Funnel, with four Stamina *(or Threads) ſurrounding the Pointal; which Pointal becomes, for the moſt part, an oblong Seed, ſurrounded by the Flower-cup: to which may be added, The Flowers are produced from the Wings of the Leaves.*

The *Species* are;

1. PARIETARIA *officinarum, & Dioſcoridis. C. B. P.* Pellitory of the Wall.

2. PARIETARIA *minor, ocymi folio. C. B. P.* Leſſer Pellitory, with a Baſil-leaf.

The firſt of theſe Plants is ſuppoſed to be the true Sort, which is recommended by *Dioſcorides* for medicinal Uſe: this is the moſt common in *Germany*, and ſome other Countries; but it is very different from that which grows wild in *England*, which is more like the ſecond Sort, tho' I can't poſitively affirm it to be the ſame.

Theſe Plants grow wild upon old Walls and Buildings in great Plenty; but may be cultivated by ſowing their Seeds in Autumn, upon a dry gravelly or ſtony Soil; where they will thrive much better than in a rich Soil, and are preferable for Uſe to thoſe which grow in a moiſt rich Ground; for though in ſuch Places they will often be very rank, yet they are not near ſo ſtrongly ſcented.

PARIS, Herb Paris, True-love, or One-berry.

The *Characters* are;

The Empalement of the Flower is compoſed of four Leaves, which expand in form of a Croſs; the Flower alſo hath four Leaves, which ſpread open in the ſame manner: in the Centre of the Flower is ſituated the ſquare Pointal, attended by eight Stamina, *each being crown'd with an oblong erect Summit: the Pointal afterward changes to a roundiſh Berry, having four Cells, which are filled with Seeds.*

We know but one *Species* of this Genus; *viz.*

PARIS *foliis quaternis. Lin. Ver.* Herb Paris, True-love, or One-berry.

This Plant grows wild in moiſt ſhady Woods, in divers Parts of *England*, but eſpecially in the Northern Counties; and it is with great Difficulty preſerved in Gardens. The only Method to procure it is, to take up the Plants from the Places where they grow wild, preſerving good Balls of Earth to their Roots, and plant them in a ſhady moiſt Border, where they may remain undiſturbed: in which Situation they will live ſome Years; but as it is a Plant of little Beauty, it is rarely preſerved in Gardens.

PARKINSONIA.

The *Characters* are;

It hath a polypetalous anomalous Flower, conſiſting of five diſſimilar Leaves, from whoſe Cup ariſes the

Pointal, which afterward becomes a rough jointed Pod; each Knot or Joint containing one kidney-ſhap'd Seed.

We know but one *Species* of this Plant; which is,

Parkinsonia *aculeata, foliis minutis, uni coſtæ adnexis. Plum Nov. Gen.* Prickly Parkinſonia, with very ſmall Leaves, faſtened to one middle Rib.

This Plant was diſcover'd by Father *Plumier* in *America*; who gave it this Name, in Honour to the Memory of Mr. *John Parkinſon*, who publiſh'd an univerſal Hiſtory of Plants in *Engliſh*, in the Year 1640.

It is very common in the *Spaniſh Weſt-Indies*; but of late Years it has been introduced into the *Engliſh* Settlements in *America*, for the Beauty and Sweetneſs of its Flowers. This, in the Countries where it grows, naturally riſes to be a Tree of twenty Feet high, or more; and bears long ſlender Bunches of yellow Flowers, which hang down after the ſame manner as the Laburnum. Theſe Flowers have a moſt agreeable ſweet Scent, ſo as to perfume the Air to a conſiderable Diſtance round about the Trees; for which Reaſon the Inhabitants of the *Weſt-Indies* plant them near their Habitations. And though this Plant has not been introduced many Years into the *Engliſh* Settlements, yet it is now become ſo common in all the Iſlands, that but few Houſes are without ſome of the Trees near it; for it produces Flowers and Seeds in plenty, in about two Years, from Seed; ſo that it may ſoon be made common in all hot Countries: but in *Europe* it requires a Stove, otherwiſe it will not live through the Winter.

This Plant is propagated by Seeds, which ſhould be ſown in ſmall Pots filled with light freſh Earth early in the Spring; and the Pots muſt be plunged into an Hot-bed of Tanners Bark, where, in about three Weeks or a Month's time, the Plants will come up; when they ſhould be kept clear from Weeds, and frequently refreſhed with Water. In a little time theſe Plants will be fit to tranſplant; which ſhould be done very carefully, ſo as not to injure their Roots. They muſt be each planted into a ſeparate Halfpeny Pot filled with freſh light Earth, and then plunged into the Hot-bed again, obſerving to ſtir up the Tan; and if it hath loſt its Heat, there ſhould be ſome freſh Tan added, to renew the Heat again: then the Plants ſhould be ſcreened from the Heat of the Sun, until they have a new Root; after which time they ſhould have freſh Air admitted to them every Day, in proportion to the Warmth of the Seaſon; and they muſt be conſtantly ſupplied with Water every other Day, in warm Weather. With this Management the Plants will grow ſo faſt, as to fill the Pots with their Roots by the Beginning of *July*: at which time they ſhould be ſhifted into Pots a little larger than the former, and plunged again into the Bark-bed, provided the Plants are not too tall to remain under the Frame, without Danger of being ſcorched by the Glaſſes; in which Caſe they muſt be plunged into the Bark-bed in the Stove, where they may have room to grow. But before the Weather becomes cold, it will be the beſt way to inure the Plants by degrees to bear the open Air, that they may be harden'd before Winter; for if they are kept too warm in Winter, the Plants will decay before the next Spring. The only Method by which I have ſucceeded in keeping theſe Plants thro' the Winter, was by hardening them in *July* and *Auguſt* to bear the open Air; and in *September* I placed them on Shelves in the dry Stove, at the greateſt Diſtance from the Fire, ſo that they were in a very temperate Warmth; and there they retained their Leaves all the Winter, and continued in Health, when thoſe which were placed in a warmer Situation, as alſo thoſe in the Green-houſe, were intirely deſtroyed.

PARNASSIA, Graſs of *Parnaſſus*.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of five Leaves, at the Bottom of which are ſmall fringed Leaves, of a greeniſh Colour, which are placed orbicularly: out of the Flower-cup riſes the Pointal, which afterward turns to a membranaceous Fruit, which is oval, having but one Cell, which is filled with Seeds, that, for the moſt part, adhere to a fourfold Placenta.

The *Species* are;

1. PARNASSIA *paluſtris & vulgaris. Inſt. R. H.* Common Marſh-graſs of *Parnaſſus*.

2. PARNASSIA *vulgaris, flore pleno*. Common Graſs of *Parnaſſus*, with a double Flower.

The former of theſe Sorts grows wild in moiſt Meadows, in ſeveral Parts of *England*, but particularly in the North; but it doth not grow in the Neighbourhood of *London*, any nearer than on the other Side of *Watford*, in the low Meadows by *Caſſiobery*, where it is in pretty great Plenty.

The other Sort is an accidental Variety of the former; which has been diſcovered wild, and tranſplanted into Gardens. This is but rarely to be found, being in very few Gardens at preſent.

Theſe Plants may be taken up from the natural Places of their Growth, with Balls of Earth to their Roots, and planted into Pots filled with pretty ſtrong freſh undung'd Earth, and placed in a ſhady Situation, where, if they are conſtantly watered, they will thrive very well, and flower every Summer: but if the Plants are planted in the full Ground, it ſhould be in a very moiſt ſhady Border, otherwiſe they will not live; and theſe ſhould be as duly watered, as thoſe in the Pots in dry Weather, to make them produce ſtrong Flowers.

They may be propagated by parting of their Roots, which ſhould be done in *March*, before they put out new Leaves: but the Roots ſhould not be divided too ſmall; for that will prevent their flowering the following Summer: theſe Roots ſhould always be planted in pretty ſtrong freſh Earth; for they will not thrive in a light rich Soil. In the Spring they muſt be conſtantly watered, if the Seaſon ſhould prove dry, otherwiſe they will not flower; nor ſhould they be parted oftener than every third Year, to have them ſtrong. Theſe Plants flower in *July*, and their Seeds are ripe the latter End of *Auguſt*.

It is called *Parnaſſus*, from *Mount Parnaſſus*, on which it was ſuppoſed to grow; and from the Cattle feeding on it, it was called a Graſs, though the Plant has no Reſemblance to any of the Graſs-kind; but is more like to the Ranunculus in Flower; and the Leaves are pretty broad, oblong, and ſmooth.

PARONYCHIA, Mountain Knot-graſs.

The *Characters* are;

It hath an apetalous Flower, conſiſting of ſeveral Chives, which riſe from the Flower-cup, which is ſhaped like the Pelvis, *and cut into five Parts, for the moſt part like a Crown: the Pointal afterward becomes a round Seed, wrapt up in a five-cornered Huſk, which was before the Flower-cup.*

The *Species* are;

1. PARONYCHIA *Hiſpanica. Cluſ. Hiſp. Spaniſh* Mountain Knot-graſs.

2. PARONYCHIA *Narbonenſis erecta. Inſt. R. H.* Upright Mountain Knot-graſs of *Narbonne.*

3. PARONYCHIA *Hiſpanica ſupina Alſinefolia, capitulis minus compactis. Inſt. R. H.* Low *Spaniſh* Mountain Knot-graſs, with a Chickweed-leaf, and the Heads leſs compact.

4. PARONYCHIA *Hiſpanica fruticoſa, myrti folio. Inſt. R. H.* Shrubby *Spaniſh* Mountain Knot-graſs, with a Myrtle-leaf.

5. PARONYCHIA *Luſitanica, polygoni folio, capitulis echinatis. Inſt. R. H. Portugal* Mountain Knot-graſs, with prickly Heads.

6. PARONYCHIA *Orientalis humifuſa, ſerpylli folio. Tourn. Cor.* Dwarf Eaſtern Mountain Knot-graſs, with a Mother-of-thyme-leaf.

The five Sorts firſt-mentioned grow wild in *Spain, Portugal,* and the South of *France,* where they generally are found near the Sea, on the Sides of Banks; but the ſixth Sort was diſcovered by Dr. *Tournefort* in the *Levant.* They are all (except the ſecond and fourth Sorts) low Plants, which trail on the Ground, in the ſame manner as our common Knot-graſs; but continue ſeveral Years.

Theſe Plants are preſerved by thoſe who are curious in Botany, for the ſake of Variety; but are ſeldom admitted into other Gardens; though the firſt Sort may have room in every good Garden, for the fine Appearance it makes in Autumn, when the ſilvery ſcaly Heads, which are produced at every Joint of the Branches, make a goodly Shew.

They may all be propagated by ſowing their Seeds on a Bed of light freſh Earth, in an open Situation, about the Middle or Latter-end of *March*; and when the Plants come up, they ſhould be carefully weeded; and if the Seaſon ſhould prove dry, they muſt be now-and-then watered. When the Plants are large enough to tranſplant, they ſhould be carefully taken up, and ſome of them planted in Pots, and the others on a warm Border, where they may be ſheltered in Winter; otherwiſe they will not live in this Country. Thoſe which are planted in Pots, ſhould be placed under an Hot-bed-frame, where they may be ſcreened from hard Froſt; but ſhould have as much free Air as poſſible in mild Weather. With this Management the Plants may be preſerved many Years, and will flower every Seaſon; but they rarely produce any Seeds in this Country.

PARSLEY. *Vide* Apium.

PARSNEP. *Vide* Paſtinaca.

PARTHENIUM, Baſtard Feverfew.

The *Characters* are;

It hath a radiated diſcous Flower, conſiſting of ſeveral Florets, which occupy the Diſk, but are barren: the Half-florets, which are ſhaped like an Heart, are ſucceeded by black Seeds, which are naked, having no Down adhering to them: to which may be added, The Flower-cup is ſimple, and cut into five Parts in the Bottom.

The *Species* are;

1. PARTHENIUM *foliis compoſito multifidis. Lin. Hort. Cliff.* Baſtard Feverfew, with a Mugwort-leaf.

2. PARTHENIUM *foliis ovatis crenatis. Lin. Hort. Cliff.* Baſtard Feverfew, with an Elecampane-leaf.

3. PARTHENIUM *foliis lanceolatis ſerratis. Lin. Hort. Cliff.* Shrubby Baſtard Feverfew, with ſpear-ſhap'd Leaves, by ſome falſly call'd, The Jeſuits Bark-tree.

The firſt Sort grows wild in great Plenty in the Iſland of *Jamaica*, and in ſome other of the *Engliſh* Settlements in the *Weſt-Indies*, where it is called wild Wormwood, and is uſed by the Inhabitants as a vulnerary Herb.

The ſecond Sort grows plentifully in ſeveral Parts of the *Spaniſh Weſt-Indies*; from whence the Seeds have been brought to *Europe*.

The firſt is an annual Plant, which may be propagated by ſowing the Seeds on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be tranſplanted on another Hot-bed, at about five or ſix Inches Diſtance, obſerving to water and ſhade them until they have taken new Root; after which time they muſt have a pretty large Share of freſh Air in warm Weather, by raiſing of the Glaſſes of the Hot-bed every Day; and they muſt be duly watered every other Day at leaſt. When the Plants have grown ſo as to meet each other, they ſhould be carefully taken up, preſerving a Ball of Earth to their Roots; and each planted into a ſeparate Pot filled with light rich Earth; and if they are plunged into a moderate Hot-bed, it will greatly facilitate their taking freſh Root; but where this Conveniency is wanting, the Plants ſhould be removed to a warm-ſheltered Situation, where they muſt be ſhaded from the Sun until they have taken new Root; after which time they may be expoſed, with other tender annual Plants, in a warm Situation; where they will flower in *July*, and their Seeds will ripen in *September*. But if the Seaſon ſhould prove cold and wet, it will be proper to have a Plant or two in Shelter, either in the Stove, or under tall Frames, in order to have good Seeds, if thoſe Plants which are expoſed ſhould fail, whereby the Species may be preſerved.

The ſecond Sort is a perennial Plant, which dies to the Ground every Autumn, and ſhoots up again the following Spring. The Seeds of this Sort were ſent me by my good Friend Dr. *Thomas Dale*, from *South-Carolina*, where the Plants grow wild. This may be propagated by parting of the Roots in Autumn, and may be planted in the full Ground, where it will abide the Cold of our ordinary Winters very well. This Sort flowers in *July*, but ſeldom produces good Seeds in *England*.

The third Sort has been many Years preſerved in the *Engliſh* Gardens. This was brought from *America* for the true Jeſuits Bark-tree; but it hath been ſince diſcovered, that the Tree from whence that Bark is taken, is of a different Genus from this; and, by the Seed veſſels, appears to be near akin to the *Juſticia*.

This Plant was generally preſerved in Pots, and houſed in the Winter; but, of late Years, it hath been planted in the open Air, where it thrives, and endures the Cold very well, provided it is planted in a ſheltered Situation. It may be propagated by Cuttings, which ſhould be planted in *March*, upon a Border of loamy Earth; and if the Spring ſhould prove dry, they muſt be often watered, otherwiſe the Cuttings will fail: but if they are properly manag'd, they will be well rooted by the Autumn, and may then be tranſplanted. It may alſo be propagated by Layers, which will be well rooted in one Year; or from Suckers, which are often produced in plenty from the Roots of the old Plants: but as there is little Beauty in the Plant, and as the Shoots are very irregular, and thinly diſpoſed; few

Perſons care to preſerve the Plants, unleſs it be for the ſake of Variety.

PASQUE-FLOWER. *Vide* Pulſatilla.

PASSERINA, Sparrow-wort.

This Title was applied by *Tragus* to a Plant of another Genus; but Dr. *Linnæus* has conſtituted a new Genus by this Name.

The *Characters* are;

The Flower hath no Empalement, and conſiſts of one Leaf, which is tubulous, and cut into four Parts at the Brim: in the Centre of the Flower is ſituated the Pointal, attended by eight Stamina: *the Pointal afterward changes to an oval Fruit, having one Cell, in which is lodged one oval-pointed Seed.*

The *Species* are;

1. Passerina *foliis linearibus. Lin. Hort. Cliff.* Sparrow-wort with very narrow Leaves.

2. Passerina *foliis lanceolatis. Lin. Hort. Cliff.* Sparrow-wort, with ſpear-ſhap'd Leaves.

The firſt Sort hath been mentioned by ſome Authors under the Title of *Thymelea tomentoſa*, &c. and the ſecond Sort under the Title of *Erica Africana*, &c. and both of them have had ſeveral Names applied to them; which were ſo confuſed, as render it very difficult to know the Plants they mentioned.

Theſe Plants grow to the Height of four or five Feet, in *England*, and may be trained up very regular; and as they are ever green, there may be a Plant or two of each Sort allowed to have a Place in the Green-houſe, where a Collection of rare Plants is maintain'd.

Theſe are both propagated by Cuttings, which ſhould be planted in the Spring, upon a moderate Hot-bed; where, if they are duly watered, and ſcreened from the Sun, they will take Root in about three Months, ſo as to be fit to remove; when they ſhould be each tranſplanted into a ſmall Pot filled with freſh light Earth, and placed in a ſhady Situation until they have taken Root; after which time, they may be placed in a ſheltered Situation, with other hardy Exotic Plants, till *October*; when they muſt be removed into the Green-houſe for the Winter-ſeaſon, and may be treated in the ſame manner as hath been directed for *Hermannia's*.

PASSION-FLOWER. *Vide* Granadilla.

PASTINACA, Parſnep.

The *Characters* are;

It is a Plant with roſe and umbellated Flowers, conſiſting of many Petals or Leaves placed orbicularly, and reſting on the Empalement; which turns to a Fruit, compoſed of two Seeds, which are oval, large, thin, border'd, and generally caſting off their Cover: to theſe Marks muſt be added, That the Leaves are winged and large.

The *Species* are;

1. Pastinaca *ſativa latifolia. C. B. P.* Garden Parſnep.

2. Pastinaca *ſylveſtris latifolia. C. B. P.* Wild Parſnep.

3. Pastinaca *ſylveſtris altiſſima. Tourn.* The talleſt wild Parſnep, or *Hercules*'s All-heal.

The ſecond Sort grows wild in divers Parts of *England*, upon the Sides of dry Banks; and is by ſome affirmed to be no-ways different from the firſt Sort, but by Cultivation: which is a very great Miſtake; for I have ſown the Seeds of both Sorts in the ſame Bed for ſeveral Years; but could not find, that either Sort alter'd in the leaſt, the ſecond ſtill retaining the ſame Smoothneſs in the Leaf, and the ſame pale Colour, and Largeneſs of Root; as did the firſt its uſual Roughneſs, dark-green Colour, and ſlender Roots: nor do

I believe either Sort will alter, if they were cultivated ever ſo long.

The Root and Seeds of the ſecond Sort is ſometimes uſed in Medicine; but it is ſeldom cultivated in Gardens, the Markets being ſupplied from the Fields: yet the Druggiſts commonly ſell the Seeds of the Garden-kind for it; which they may purchaſe at an eaſy Price, when it is too old to grow.

The firſt Sort is cultivated in Kitchen-gardens; the Roots of which are large, ſweet, and accounted very nouriſhing. They are propagated by Seeds, which ſhould be ſown in *February* or *March*, in a rich mellow Soil; which muſt be well dug, that their Roots may run downward; the greateſt Excellency being the Length and Bigneſs of the Roots. Theſe may be ſown alone, or with Carrots, as is practiſed by the Kitchen-gardeners near *London*; ſome of whom alſo mix Leeks, Onions, and Lettuce, with their Parſneps: but this I think very wrong; for it is not poſſible, that ſo many different Sorts can thrive well together, except they are allowed a conſiderable Diſtance; and if ſo, it will be equally the ſame to ſow the different Sorts ſeparate. However, Carrots and Parſneps may be ſown very well, eſpecially where the Carrots are deſigned to be drawn off very young; becauſe the Parſneps generally ſpread moſt toward the Latter-end of Summer, which is after the Carrots are gone; ſo that there may be a double Crop upon the ſame Ground.

When the Plants are come up, you ſhould hoe them out, leaving them about ten Inches or a Foot aſunder; obſerving at the ſame time to cut up all the Weeds, which, if permitted to grow, would ſoon over-bear the Plants, and choak them: this muſt be repeated three or four times in the Spring, according as you find the Weeds grow; but in the latter Part of Summer, when the Plants are ſo ſtrong as to cover the Ground, they will prevent the Growth of Weeds; ſo that after that Seaſon they will require no farther Care.

When the Leaves begin to decay, the Roots may be dug up for Uſe; before which time they are ſeldom well taſted: nor are they good for much late in the Spring, after they are ſhot out again: ſo that thoſe who would preſerve theſe Roots for Spring-uſe, ſhould dig them up in the Beginning of *February*, and bury them in Sand, in a dry Place, where they will remain good until the middle of *April*, or later.

If you intend to ſave the Seeds of this Plant, you ſhould make choice of ſome of the longeſt, ſtraiteſt, and largeſt Roots; which ſhould be planted about two Feet aſunder, in ſome Place where they may be defended from the ſtrong South and Weſt Winds; for the Stems of theſe Plants commonly grow to a great Height, and are very ſubject to be broken by ſtrong Winds, if expoſed thereto: they ſhould be conſtantly kept clear from Weeds; and if the Seaſon ſhould prove very dry, you muſt give them ſome Water twice a Week, which will cauſe them to produce a greater Quantity of Seeds; which will be much ſtronger than if they were wholly neglected. Toward the Latter-end of *Auguſt*, or the Beginning of *September*, the Seeds will be ripe; at which time you ſhould carefully cut off the Heads, and ſpread them upon a coarſe Cloth for two or three Days, to dry; after which, the Seeds ſhould be beaten off, and put up for Uſe; but you muſt never truſt to theſe Seeds after they are a Year old; for they will ſeldom grow beyond that Age.

The third Sort is preſerv'd in Botanic Gardens, amongſt ſome other Sorts of theſe Plants, for Variety; but is ſeldom propagated for Uſe. This is by many ſuppoſed to be the the *Panaces Syriacum* of the Antients, from whence the *Opopanax* is taken, which is ſuppoſed to be the concrete Juice of this Plant; as is the *Aſſa fœtida* ſuppoſed to be the concrete Juice of one Species of this Genus.

All theſe Sorts may be cultivated by ſowing their Seeds early in the Spring, or in Autumn, ſoon after they are ripe; and ſhould be managed as the Garden-kind, with this Difference; *viz.* the Plants ſhould not ſtand nearer than two Feet and an half Diſtance; but then they need not be reduced to this until the ſucceeding Spring. Theſe Roots are perennial, and may be removed with Safety at any time after their Leaves are decay'd: they ſeldom produce Seeds until the third Year after they are ſown.

PAVIA, The Scarlet Flowering Horſe-cheſtnut, *vulgo*.

The *Characters* are;

The Leaves are like thoſe of the Horſe-cheſtnut: the Flower is of an anomalous Figure, and conſiſts of five Leaves, which are ſo diſpoſed as to reſemble a Lip-flower: the two uppermoſt are united, and form a ſort of Helmet: the three undermoſt appear ſomewhat like a Mouth gaping: theſe Flowers are diſpoſed into a Spike, and are of a beautiful ſcarlet Colour: the Ovary, which riſes in the Centre of the Flower-cup, afterward becomes an oblong pyramidal Fruit, divided into three Cells, in each of which is lodg'd one globular Seed.

There is but one *Species* of this Tree; *viz.*

PAVIA. *Boerh. Ind.* The Scarlet Flowering Horſe-cheſtnut, *vulgo*.

This Tree is a Native of *America*, from whence the Seeds were firſt brought into *Europe*: it grows in great Plenty in the Woods of *South-Carolina*, but is very hardy, enduring the ſevereſt Cold of our Climate in the open Air.

It may be propagated by ſowing the Seeds in the Spring, upon a warm Border of light ſandy Earth; and when the Plants come up, they ſhould be carefully clear'd from Weeds: but they muſt not be tranſplanted until the Year following. But as theſe Seedling-plants are tender while they are young, ſo they ſhould be cover'd with Mats the next Winter; and this ſhould be carefully perform'd in Autumn, when the early Froſts begin: for as the Top of theſe young Plants will be very tender, ſo a ſmall Froſt will pinch them; and when the Tops are kill'd, they generally decay to the Ground; and when this happens, they ſeldom make good Plants after. Therefore this ſhould be conſtantly obſerv'd for two Years, or three at moſt, by which time the Plants will have gotten Strength enough to reſiſt the Froſt; when they ſhould be remov'd juſt before they begin to ſhoot, and placed either in a Nurſery to be train'd up, or elſe where they are to remain; obſerving, if the Seaſon be dry, to water them until they have taken Root, as alſo to lay ſome Mulch upon the Surface of the Ground, to prevent the Sun and Wind from drying it too faſt: and as the Plants advance, the lateral Branches ſhould be pruned off, in order to reduce them to regular Stems.

You muſt alſo obſerve to dig the Ground about their Roots every Spring, that they may be looſe, to admit the Fibres of the Roots, which, while young, are too tender to penetrate the Ground, if it be very hard.

With this Management the Plants will greatly advance, and in four or five Years will produce Flowers and Fruits, which in warm Seaſons are perfected enough to grow; ſo that the Plants may be multiplied therefrom very faſt.

This Tree may alſo be propagated by budding or inarching it upon the common Horſe-cheſtnut; which is the common Method practiſed by the Nurſery-men: but the Trees thus raiſed will never arrive to near the Size of thoſe which are produced from Seeds; nor will they grow near ſo faſt.

Such of theſe Trees as are raiſed from Seeds, if planted in a good Soil, will grow to twenty-five or thirty Feet high, and produce great Numbers of beautiful red Flowers, which commonly appear the Beginning of *June*; at which Seaſon it makes a beautiful Appearance amongſt other hardy Trees.

PEACH. *Vide* Perſica.

PEAR. *Vide* Pyrus.

PEAS. *Vide* Piſum.

PEAS EVERLASTING. *Vide* Lathyrus.

PEDICULARIS, Rattle, Cockscomb, or Louſewort.

There are four different Kinds of this Plant, which grow wild in Paſtures in ſeveral Parts of *England*, and in ſome low Meadows are very troubleſome to the Paſtures; eſpecially one Sort with yellow Flowers, which riſes to be a Foot high, or more, and is often in ſuch Plenty, as to be the moſt predominant Plant: but this is very bad Food for Cattle; and when it is mowed with the Graſs for Hay, renders it of little Value. The Seeds of this Plant are generally ripe by the time the Graſs is mowed: ſo that whenever Perſons take Graſs-ſeed for ſowing, they ſhould be very careful, that none of this Seed is mixed with it. As theſe Plants are never cultivated, I ſhall not trouble the Reader with their ſeveral Varieties.

PELECINUS.

The *Characters* are;

It hath a papilionaceous (or Pea-bloom) Flower, out of whoſe Empalement riſes the Pointal, which afterward becomes a plain bicapſular and bivalve Pod, indented on each Side like a Saw, and filled with plain kidney ſhaped Seeds.

We know but one *Species* of this Plant; *viz.*

PELECINUS *vulgaris. Inſt. R. H.* Common Pelecinus.

This Plant is preſerv'd in Botanic Gardens, for the ſake of Variety: it is an annual Plant; ſo the Seeds ſhould be ſown early in *April*, on a Bed of freſh light Earth, in Drills about eighteen Inches aſunder: and when the Plants are come up, they ſhould be carefully clear'd from Weeds; and where they are too cloſe, they ſhould be thinn'd, leaving them ſix or eight Inches Diſtance in the Rows, and obſerve always to keep them clear from Weeds, which is all the Culture they require. Theſe Plants ſpread on the Ground, and from the Wings of the upper Leaves the Flowers are produced on ſlender Footſtalks, which are ſmall, and of a dirty-red Colour; theſe are ſucceeded by Pods, which are flat, and indented on both Sides, reſembling the Saw of the Saw-fiſh.

PELLITORY OF THE WALL. *Vide* Parietaria.

PENTAPHYLLOIDES. *Vide* Potentilla.

PENY-ROYAL. *Vide* Pulegium.

PEONY. *Vide* Pæonia.

PEPO, Pumpion,

The *Characters* are;

The Flower conſiſts of one Leaf, which is bell ſhaped, expanded at the Top, and cut into ſeveral Segments: of theſe Flowers ſome are Male, and ſome are Female, as in the Cucumbers and Melons: the Female Flowers grow upon the Top of the Embryo, *which afterward becomes an oblong or round fleſhy Fruit, having ſometimes an hard, rugged, or uneven Rind, with Knobs and Furrows; and is often divided into three Parts, incloſing flat Seeds, that are edged or rimmed about, as it were, with a Ring, and fix'd to a ſpongy* Placenta.

The *Species* are;

1. Pepo *oblongus. C. B. P.* The greater oblong Pumpion.

2. Pepo *vulgaris. Raii Hiſt.* The common Pumpion.

3. Pepo *rotundus, aurantii forma. C. B. P.* Orange-ſhap'd Pumpion.

4. Pepo *fructu parvo pyriformi. Tourn.* Pear-ſhap'd Pumpion.

5. Pepo *fructu minimo ſphærico. Tourn.* Pumpion with a very ſmall ſpherical Fruit.

There are ſeveral other Varieties of theſe Fruits, which ſeem to be only ſeminal Variations; ſo that it would be needleſs to mention them all in this Place, ſince the Seeds taken from any one of the Sorts will not continue the ſame three Years together, if ſown in the ſame Garden, as I have ſeveral times experienced.

The two firſt Sorts are by ſome Perſons cultivated for their Fruit; which, when ripe, they cut open, and take out the Seeds, and then ſlice ſome Apples into the Shells, mixing them with the Pulp of the Fruit and Sugar: this they bake in an Oven, and afterwards eat it ſpread upon Bread and Butter: but it is too ſtrong for Perſons of weak Stomachs, and only proper for Country-people, who uſe much Exercise.

The Seeds of theſe Plants are uſed as one of the four cold Seeds in Medicine.

The other Sorts are preſerved by ſome curious Perſons, for Variety; but are of little Uſe, being good for nothing when grown old; but while they are very ſmall, ſome Perſons gather and boil them, like Turneps, or as they do the Squaſhes; and are very fond of them.

Theſe may be propagated in the ſame manner as was directed for the Gourds; to which I ſhall refer the Reader, to avoid Repetition.

PERESKIA, *Barbados* Gooſeberry, *vulgo.*

The *Characters* are;

It hath a roſe-ſhaped Flower conſiſting of ſeveral Leaves, which are placed orbicularly; whoſe Cup afterward becomes a ſoft fleſhy globular Fruit, beſet with Leaves: in the middle of the Fruit are many flat roundiſh Seeds, included in a Mucilage.

We know but one *Species* of this Plant; *viz.*

Pereskia *aculeata, flore albo, fructu flaveſcente. Plum. Nov. Gen.* Prickly Pereſkia, with a white Flower, and a yellowiſh Fruit.

This Plant grows in ſome Parts of the *Spaniſh Weſt-Indies*, from whence it was brought to the *Engliſh* Settlements in *America*, where it is call'd a Gooſeberry, and by the *Dutch* it is call'd Blad-apple. This Plant hath many ſlender Branches, which will not ſupport themſelves; ſo muſt be ſupported by Stakes, otherwiſe they will trail on whatever Plants grow near them. Theſe Branches, as alſo the Stem of the Plant, are beſet with long whitiſh Spines, which are produc'd in Tufts. The Leaves are roundiſh, very thick and ſucculent; and the Fruit is about the Size of a Walnut, having Tufts of ſmall Leaves on it, and hath a whitiſh mucilaginous Pulp.

It may be propagated by planting the Cuttings during any of the Summer-months: theſe Cuttings ſhould be planted in Pots filled with freſh light Earth, and plunged into a moderate Hot-bed of Tanners Bark, obſerving to ſhade them from the Heat of the Day, as alſo to refreſh them every third or fourth Day with Water. In about two Months the Cuttings will have made good Roots, when they may be carefully taken out of the Pots, and each planted in a ſeparate Pot fill'd with freſh Earth, and then plunged into the Hot-bed again, where they may remain during the Summer-ſeaſon; but at *Michaelmas*, when the Nights begin to be cold, they ſhould be removed into the Stove, and plunged into the Bark-bed. During the Winter-ſeaſon, the Plants muſt be kept warm, and ſhould be water'd twice a Week; but in cold Weather it ſhould not be given in large Quantities. In Summer they muſt have a large Share of Air, and muſt be more plentifully water'd: but they ſhould conſtantly remain in the Stove; for though they will bear the open Air in Summer, in a warm Situation, yet they will make no Progreſs, if they are placed abroad; nor do they thrive near ſo well in the Dry-ſtove, as when they are plunged in the Tan; ſo that the beſt Way is to ſet them next a Trellace, at the Back of the Tan-bed, to which their Branches may be faſtened, to prevent their trailing on other Plants. This Plant has not as yet produced either Flowers or Fruit in *England*; but as there are ſeveral Plants pretty well grown in the Gardens of the Curious, ſo we may expect ſome of them will flower in a ſhort time.

PERICLYMENUM, Trumpet-honeyſuckle, *vulgo*.

The *Characters* are;

It hath the whole Appearance of the Honeyſuckle (from which it differs in the Shape of the Flower), which is tubuloſe or bell-ſhaped, and expands at the Top, where it is cut into ſeveral almoſt equal Segments.

The *Species* are;

1. PERICLYMENUM *Virginianum, ſemper virens & florens. H. L.* Virginian Scarlet Honeyſuckle, *vulgo*.

2. PERICLYMENUM *racemoſum, flore flaveſcente, fructu niveo. Plum. Tab. Hort. Elth.* Branching Trumpet-honeyſuckle, with a yellow Flower, and a ſnowy Fruit, commonly call'd in *Barbados*, Snowberry-buſh.

3. PERICLYMENUM *arboreſcens, ramulis inflexis, flore luteo. Plum. Cat.* Tree-like Trumpet-honeyſuckle, with a yellow Flower.

4. PERICLYMENUM *aliud arboreſcens, ramulis inflexis, flore corallino. Plum. Cat.* Tree-like Trumpet-honeyſuckle, with a coralline Flower.

The firſt Sort is a Shrub greatly eſteem'd for the Beauty of its Flowers, which are of a fine ſcarlet Colour, the Leaves continue all the Year green, and it continues flowering moſt Part of the Summer.

It may be propagated by laying down the tender Branches in the Spring, obſerving in dry Weather to refreſh them with Water, which will greatly facilitate their Rooting: the Spring following, they will be fit to tranſplant; when they ſhould be cut off from the old Plants, and carefully taken up, ſo as not to injure their Roots. The beſt time to remove them is in *March*, juſt before they ſhoot out; but you muſt obſerve, if the Seaſon ſhould prove dry, to water them, and lay a little Mulch upon the Surface of the Ground near their Stems, to prevent the Ground from drying too faſt. It ſhould have a ſtrong moiſt Soil, and be expoſed to the South-eaſt Sun; but muſt have the Aſſiſtance of a Wall or Pale to ſupport the Branches, otherwiſe they will trail upon the Ground.

This Plant, although a Native of *Virginia*, yet, if planted in a clear Air, will endure the ſevereſt Cold of our Climate very well; but it will not thrive in cloſe Places, or too near the City, the Smoke ariſing from the Sea-coal Fires being very pernicious to it.

The ſecond Sort is pretty common in *Barbados* and *Jamaica*, where the Inhabitants give it the Name of Snowberry-buſh, from the extreme Whiteneſs of the Fruit. The third and fourth Sorts were diſcover'd by Father *Plumier* in ſome of the *French* Settlements in *America*; and ſince by the late Dr. *Houſtoun* at *La Vera Cruz*.

Theſe are all of them very tender Plants; ſo muſt conſtantly remain in the Bark-ſtove, otherwiſe they will not thrive in this Country. They may be propagated by Seeds, which ſhould be brought over either in Sand or Earth, otherewiſe they ſeldom ſucceed: when they arrive, the Tubs of Earth, in which the Seeds were ſown, ſhould be plunged into an Hot-bed of Tanners Bark, obſerving frequently to water them: and when the Plants are come up, they ſhould be carefully tranſplanted into ſeparate ſmall Pots filled with freſh rich Earth, and plunged into the Hot-bed again; where they may remain till about *Michaelmas*, when they ſhould be plunged into the Bark-bed in the Stove, and treated as other tender Exotic Plants from the ſame Countries; and in two or three Years the Plants will flower, when they will make an agreeable Variety.

PERIPLOCA, *Virginian* Silk, *vulgo*.

The *Characters* are;

The Flower conſiſts of one Leaf, which is more expanded at the Brim than thoſe of the Apocynum; *the Pointal, which riſes in the Centre of the Flower-cup, becomes a Fruit ſo nearly reſembling that of the* Apocynum, *as not to be diſtinguiſh'd therefrom, but by very curious Obſervers: to which ſhould be added, It hath climbing Stalks.*

The *Species* are;

1. Periploca *foliis oblongis. Tourn.* Periploca with oblong Leaves.
2. Periploca *Monſpeliaca, foliis rotundioribus. Tourn.* Periploca of *Montpelier*, with rounder Leaves.
3. Periploca *foliis oblongis anguſtioribus. Inſt. R H.* Longer and narrower-leav'd *Virginian* Silk, or Climbing Dogs-bane.
4. Periploca *Monſpeliaca, foliis acutioribus. Inſt. R. H.* Climbing Dogs-bane of *Montpelier*, with ſharp-pointed Leaves.
5. Periploca *Americana, fructu molliter echinato. Inſt. R. H. American* Climbing Dogs-bane, with a prickly Fruit.
6. Periploca *Americana latifolia, ſiliqua dura oblonga, tumida & glabra. Inſt. R. H.* Broad-leav'd *American* Climbing Dogs-bane, with a long hard ſmooth ſwelling Pod.
7. Periploca *Americana ſcandens, ſalicis, anguſtiſſimo folio, flore albo. Plum.* Climbing *American* Dogs-bane, with a narrow Willow-leaf, and a white Flower.
8. Periploca *Americana repens umbellata, foliis citri, flore coccineo. Plum.* Creeping *American* Dogs-

bane, with a Citron-leaf, and ſcarlet Flowers, growing in an Umbel.

9. Periploca *Americana ſcandens, folio citri, fructu maximo. Plum.* *American* Climbing Dogsbane, with a Citron-leaf, and a large Fruit.

10. Periploca *Americana ſcandens, folio convolvuli, fructu alato. Plum.* *American* Climbing Dogsbane, with a Convolvulus-leaf, and a winged Fruit.

The firſt Sort hath woody Branches, which twiſt themſelves about each other, or whatever Support is near it, and will riſe to the Height of thirty Feet or upwards: this produces its ſtarry-ſhap'd Flowers in Cluſters from the Footſtalks of the Leaves; which are of a dark-purple Colour, but have no Scent.

This may be propagated by laying down its Branches in the Spring, which will take Root in a Year's time; when the Layers may be taken off, and tranſplanted where they are to remain; which ſhould be either againſt a lofty Wall or Building, or elſe placed in Wilderneſs-quarters amongſt other tall-flowering Trees, where they ſhould be ſupported by ſtrong Poles, about which theſe Plants will twine, and riſe to a great Height. This Sort is hardy, and will endure the Cold of our Winters very well, provided it is planted in a dry Soil.

It produces its Flowers in *June* and *July*; but rarely perfects its Seeds in *England*. The Flowers are not very beautiful; but, for their Oddneſs, may have a Place amongſt other hardy Shrubs in every good Garden.

The ſecond, third, and fourth have annual Stalks, but perennial Roots, which grow to the Size of a Parſnep, and will continue many Years. Theſe will live in the full Ground in *England*, if they are planted in a dry Soil, and have a warm Situation: their Branches decay in Autumn, and freſh are ſent out from their Roots in the Spring, which twiſt in the ſame manner as Hops, to whatever is near them, and grow to the Height of ſix or ſeven Feet: the Flowers are of a greeniſh-white Colour; ſo there is little Beauty in them.

The other ſeven Sorts are tender, being Natives of the warm Parts of *America*. The Seeds of all theſe Sorts were ſent to *England* by the late Dr. *Houſtoun*, who collected them in *Jamaica*, at *Campechy*, and *Carthagena*, where they grow in great Plenty, and twiſt themſelves round whatever Trees grow near them; and ſome of them riſe to the Height of forty or fifty Feet, or more. Some of theſe Sorts produce very large warted Pods, which are full of oblong flat Seeds; to which is faſtened a very long ſoft white Down, which helps to convey the Seeds to a great Diſtance when ripe. This Down, as alſo that of the Apocynum, have of late Years been uſed to ſtuff Pillows, Mattreſſes, and Quilts, for which Purpoſes there is nothing ſo proper; for it is ſo exceedingly light, that a Quilt of great Thickneſs is hardly to be felt, when ſpread over a Bed; which is of great Advantage to thoſe Perſons who are troubled with the Gout, and cannot bear any Weight on the Part affected. It hath alſo a very great Elaſticity, ſo that it is not apt to ſtick together. This Down is call'd in *French*, *De la Wadde*, and is greatly in Uſe among the Quality in *France*.

All theſe Plants may be propagated by Seeds, which ſhould be ſown on an Hot-bed early in the Spring; and when the Plants are come up fit to tranſplant, they ſhould each be planted into a ſeparate Pot fill'd with freſh Earth, and plung'd into a moderate Hot-bed, obſerving to ſhade them from the Sun every Day until they have taken new Root; after which time they ſhould have a large Share of Air in warm Weather, and muſt have plenty of Water. In about ſix Weeks or two Months after planting, the Plants will get up to reach the Glaſſes of the Hot-bed; when they ſhould be ſhifted into larger Pots, and plunged into the Bark-bed in the Stove; where they muſt be ſupported by an Eſpalier, otherwiſe they will twiſt themſelves round whatever Plants grow near them.

Theſe Plants will bear the open Air in Summer; but they never make any Progreſs when they are expos'd, and rarely flower: therefore, in order to have theſe Plants in Beauty, they ſhould conſtantly remain in the Stove, and muſt have a large Share of free Air in mild Weather. When they are thus managed, they will riſe to the Height of thirty Feet, or more, and will produce Flowers every Summer.

The fourth Sort hath been by ſome Perſons taken for Scammony; and is by ſome Authors titled *Montpelier* Scammony; the Roots and Branches abounding with a milky Juice: but the true *Turky* Scammony is a Species of Convolvulus, under which Article it is before mentioned.

PERIWINCLE. *Vide* Pervinca.

PERSEA, The Avocado, or Avogato Pear.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of ſeveral Leaves, which are ranged in a Circle; from whoſe Middle ariſes the Pointal, which afterward becomes a ſoft fleſhy pear-ſhaped Fruit, in which is an hard Stone or Seed, having two Lobes, which is included in a Membrane or Pericarpium.

We know but one *Species* of this Plant; *viz.*

PERSEA. *Cluſ. Hiſt.* The Avocado, or Avogato Pear.

This Tree grows in great Plenty in the *Spaniſh Weſt-Indies*, as alſo in the Iſland of *Jamaica*; and hath been tranſplanted into moſt of the *Engliſh* Settlements in the *Weſt-Indies*, on account of its Fruit; which is not only eſteemed by the Inhabitants as a Fruit to be eaten by way of Deſſert, but is very neceſſary for the Support of Life. The Fruit of itſelf is very inſipid; for which Reaſon they generally eat it with the Juice of Lemons and Sugar, to give it a Piquancy. It is very nouriſhing, and is reckon'd a great Incentive to Venery. Some People eat this Fruit with Vinegar and Pepper.

This Tree, in the warm Countries, where it is planted, grows to the Height of thirty Feet, or more; and has a Trunk as large as our common Apple-trees: the Bark is ſmooth, and of an Aſh-colour; the Branches are beſet with pretty large oblong ſmooth Leaves, like thoſe of Laurel, which are of a deep-green Colour, and continue on the Tree throughout the Year: the Flowers and Fruit are, for the moſt part, produc'd toward the Extremity of the Branches.

In *Europe* this Plant is preſerved as a Curioſity, by thoſe Perſons who are ſkilful in collecting Exotic Plants: and tho' there is little Hope of its producing Fruit, yet, for the Beauty of its ſhining green Leaves, which continue thro' the Winter, it deſerves a Place in every curious Collection of Plants.

It is propagated by Seeds, which ſhould be obtained as freſh as poſſible,

ſible, from the Countries of its Growth; and if they are brought over in Sand, they will be more likely to grow, than ſuch as are brought over dry. Theſe Nuts or Seeds ſhould be planted in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark, which ſhould be kept pretty warm. The Pots ſhould be alſo frequently watered, when the Earth appears dry, which will greatly facilitate the Vegetation of the Seed, provided the Water is not given in large Quantities, which would rot them. In about a Month or five Weeks the Plants will come up, when they muſt be treated very tenderly; for the Bed muſt be kept in a due Temperature for Heat; and when the Day proves warm, the freſh Air ſhould be admitted to the Plants, by raiſing the Glaſſes a little. When they have grown about four Inches high, they ſhould be carefully tranſplanted; and where there are ſeveral Plants in one Pot, they muſt be parted, being careful to preſerve a Ball of Earth to the Root of each, and planted into ſeparate ſmall Pots fill'd with light rich Earth, and then plunged into an Hot-bed of Tanners Bark; obſerving to ſhade them until they have taken new Root; after which time they ſhould have freſh Air admitted to them in proportion to the Warmth of the Seaſon: toward *Michaelmas* the Plants muſt be removed into the Stove, and plunged into the Bark-bed, where, during the Winter-ſeaſon, they ſhould be kept very warm, and muſt be gently watered twice a Week. In the Spring the Plants ſhould be ſhifted into Pots a Size larger than the former, and the Bark-bed ſhould be then renewed with freſh Tan, which will ſet the Plants in a growing State early, whereby they will make a fine Progreſs the following Summer. Theſe Plants muſt be conſtantly kept in the Stove; for they are too tender to bear the open Air in this Country at any Seaſon.

PERSICA, The Peach-tree.

The *Characters* are;

It hath long narrow Leaves: the Flower conſiſts of ſeveral Leaves, which are placed in a circular Order, and expand in form of a Roſe: the Pointal, which riſes from the Centre of the Flower-cup, becomes a roundiſh fleſhy Fruit, having a longitudinal Furrow, incloſing a rough rugged Stone, which is deeply furrow'd, by which it is diſtinguiſh'd from the Almond.

There are a great Variety of theſe Trees, which are cultivated in the Gardens of thoſe who are curious in collecting the ſeveral Sorts of Fruit in the different Parts of *Europe:* I ſhall therefore firſt beg Leave to mention two or three Sorts, which are cultivated for the Beauty of their Flowers; after which, I ſhall enumerate the ſeveral Sorts of good Fruit which have come to my Knowlege.

1. Persica *vulgaris, flore pleno. Tourn.* Peach-tree with double Flowers.

2. Persica *Africana nana, flore incarnato ſimplici. T.* Dwarf Almond, with ſingle Flowers, *vulgo.*

3. Persica *Africana nana, flore incarnato pleno. T.* Double-flowering Dwarf Almond, *vulgo.*

The firſt of theſe Trees is a very great Ornament in a Garden early in the Spring, the Flowers being very large, double, and of a beautiful red or purple Colour. This may be planted in Standards, and, if intermix'd amongſt other flowering Trees of the ſame Growth, makes a very agreeable Variety: or it may be planted againſt the Walls of the Pleaſure-garden, where the beautiful Appearance of its Flowers early in the Spring will be more acceptable in ſuch Places than the choiceſt Fruits, which muſt be expoſed to Servants, and others, ſo that they ſeldom can be preſerv'd in large Families until they are ripe. This Tree may be propagated by budding it on the Almond or Plum-ſtocks in the ſame manner as the other Sort of Peaches; and ſhould be planted in a good freſh Soil, that is not overmoiſt.

The other two Sorts are of humbler Growth, ſeldom riſing above five Feet high: theſe may be budded upon Almond-ſtocks, or propagated by Layers; they will alſo take upon Plum-ſtocks; but they are very apt to canker, after they have ſtood four or five Years upon thoſe Stocks, eſpecially that with double Flowers, which is tenderer than the other, which ſends out Suckers from the Root, whereby it may be eaſily propagated.

Theſe Shrubs make a very agreeable Variety amongſt low-flowering Trees, in ſmall Wilderneſs-quarters. The ſingle Sort flowers in the Beginning of *April*, and the double is commonly a Fortnight or three Weeks later.

I ſhall now proceed to mention the ſeveral Sorts of good Peaches which have come to my Knowlege: and though perhaps a greater Number of Sorts may be found in ſome Catalogues of Fruits, yet I doubt whether many of them are not the ſame Kinds call'd by different Names: for, in order to determine the various Sorts, it is neceſſary to obſerve the Shape and Size of the Flowers, as well as the different Parts of the Fruit; for this does ſometimes determine the Kind, when the Fruit alone is not ſufficient: beſides, there is a vaſt Difference in the Size and Flavour of the ſame Peach, when planted on different Soils and Aſpects; ſo that it is almoſt impoſſible for a Perſon who is very converſant with theſe Fruits to diſtinguiſh them, when brought from various Gardens.

The preſent Confuſion of the Names of Fruits hath been many times owing to the bringing over Trees from *France*; for the Perſons who are generally employed to bring over thoſe Trees for Sale, are intirely ignorant of their various Sorts, and do themſelves take them upon Truſt, from the Perſons who make it their Buſineſs to propagate great Quantities, to ſupply the Markets of *France*, whither they are brought in Waggons, and ſold out in Parcels to thoſe Perſons who bring them into *England*. It alſo happens many times, if they are received by right Names, that theſe, in Length of Time, are loſt, or the Trees come into the Poſſeſſion of other Perſons, who, not knowing the true Name of the Fruit, do often give them new Names, whereby there is ſuch a Confuſion in the Names of Fruit, as is impoſſible to rectify; and hence ſome Perſons have ſuppoſed a much greater Variety of Peaches than there is in reality; tho' as the greateſt Part of theſe have been obtained from Seeds, ſo their Varieties may be multiplied annually, until there be no End of the Sorts. However, I ſhall content myſelf with enumerating the principal Sorts now known in *England*, which are ſufficient for any Gentleman to make a Collection to continue thro' the whole Seaſon of Fruit.

1. The white Nutmeg (call'd by the *French*, *L'Avant Pêche Blanche*): This Tree has ſawed Leaves; but

generally ſhoots very weak, unleſs it is budded upon an Apricot: the Flowers are large and open: the Fruit is ſmall and white, as is alſo the Pulp at the Stone, from which it ſeparates: it is a little muſky and ſugary; but is only eſteemed for its being the firſt Sort ripe: it is in eating pretty early in *July*, and ſoon becomes mealy.

2. The red Nutmeg (call'd by the *French, L'Avant Pêche de Troyes*): This Tree has ſawed Leaves: the Flowers are large and open: the Fruit is larger and rounder than the white Nutmeg, and is of a bright vermilion Colour: the Fleſh is white, and very red at the Stone: it has a rich muſky Flavour, and parts from the Stone: this Peach is well eſteemed: it ripens toward the End of *July*.

3. The early or ſmall *Mignon* (call'd by the *French, La Double de Troyes*, or *Mignonette*): This Tree has ſmall contracted Flowers: the Fruit is of a middling Size, and round: it is very red on the Side next the Sun: the Fleſh is white, and ſeparates from the Stone, where it is red: the Juice is vinous and rich: it is ripe the End of *July*, or Beginning of *Auguſt*.

4. The yellow Alberge: This Tree has ſmooth Leaves: the Flowers are ſmall and contracted: the Fruit is of a middling Size, ſomewhat long: the Fleſh is yellow, and dry: it is ſeldom well-flavoured, but ſhould be perfectly ripe before it is gathered; otherwiſe it is good for little: it is ripe early in *Auguſt*.

5. The white *Magdalen*: This Tree has ſawed Leaves: the Flowers are large and open: the Wood is generally black at the Pith: the Fruit is round, of a middling Size: the Fleſh is white to the Stone, from which it ſeparates: the Juice is ſeldom high-flavoured: the Stone is very ſmall: this ripens early in *Auguſt*.

6. The early Purple (call'd by the *French, La Pourprée hâtive*); This Tree has ſmooth Leaves: the Flowers are large and open: the Fruit is large, round, and of a fine red Colour: the Fleſh is white, but very red at the Stone; is very full of Juice, which has a rich vinous Flavour; and is by all good Judges eſteemed an excellent Peach: this is ripe before the Middle of *Auguſt*.

7. The large or *French Mignon*: The Leaves of this Tree are ſmooth: the Flowers are large and open: the Fruit is a little oblong, and generally ſwelling on one Side: it is of a fine Colour: the Juice is very ſugary, and of an high Flavour: the Fleſh is white, but very red at the Stone, which is ſmall: this is ripe in the Middle of *Auguſt*, and is juſtly eſteemed one of the beſt Peaches: this ſeparates from the Stone. This Sort of Peach is tender, and will not thrive on a common Stock; ſo is generally budded upon ſome vigorous ſhooting Peach, or an Apricot, by the Nurſery-men, which enhances the Price of the Trees. But the beſt Method is to bud this Peach into ſome old healthy Apricot, which is planted to a South or South-eaſt Aſpect, and to cut away the Apricot when the Buds have taken, and made Shoots: upon ſome Trees which I have ſeen, thus managed, there has been a much greater Quantity of fairer, and better flavoured Fruit, than I have ever obſerved in any other Management; and the Trees have been much more healthy.

8. The *Chevreuſe* or *Belle Chevreuſe*: This Tree has ſmooth Leaves: the Flowers are ſmall and

contracted: the Fruit is of a middling Size, a little oblong, of a fine red Colour: the Fleſh is white, but very red at the Stone, from which it ſeparates: it is very full of a rich ſugary Juice, and ripens toward the End of *Auguſt*: this is a very good Bearer, and may be ranged with the good Peaches.

9. The red *Magdalen* (call'd by the *French* about *Paris*, *Madeleine de Courſon*): The Leaves of this Tree are deeply ſawed: the Flowers are large and open: the Fruit is large and round, of a fine red Colour: the Fleſh is white, but very red at the Stone, from which it ſeparates: the Juice is very ſugary, and of an exquiſite Flavour: the Fruit is ripe the End of *Auguſt*: it is one of the beſt Sort of Peaches.

10. The early *Newington* (or *Smith's Newington*): This is very like, if not the ſame, with what the *French* call *Le Pavie blanc*: this Tree has ſawed Leaves: the Flowers are large and open: the Fruit is of a middling Size, is of a fine Red on the Side next the Sun: the Fleſh is firm and white, but very red at the Stone, to which it cloſely adheres: it hath a ſugary Juice, and is ripe the End of *Auguſt*.

11. The *Montauban*: This Tree has ſawed Leaves: the Flowers are large and open: the Fruit is of a middling Size, of a deep-red, inclining to purple next the Sun; but of a pale Colour toward the Wall: the Fleſh is melting and white to the Stone, from which it ſeparates: the Juice is rich, and the Tree is a good Bearer: it ripens the Middle of *Auguſt*, and is well eſteemed.

12. The *Malta* (which is very like, if not the ſame, with the *Italian* Peach): This Tree has ſawed Leaves: the Flowers are large and open: the Fruit is of a middling Size, of a fine Red next the Sun: the Fleſh is white and melting, but red at the Stone, from which it ſeparates: the Stone is flat and pointed: the Tree is a good Bearer: this ripens the End of *Auguſt*.

13. The Nobleſt: This Tree has ſawed Leaves: the Flowers are large and open: the Fruit is large, of a bright-red next the Sun: the Fleſh is white and melting, and ſeparates from the Stone, where it is of a faint-red Colour: the Juice is very rich in a good Seaſon: it ripens the End of *Auguſt*.

14. The Chancellor: The Leaves of this Tree are ſmooth: the Flowers are ſmall and contracted: the Fruit is ſhaped ſomewhat like the *Belle Chevreuſe*, but is rounder: the Fleſh is white and melting, and ſeparates from the Stone, where it is of a fine red Colour: the Skin is very thin, and the Juice is very rich: it ripens about the End of *Auguſt*, and is eſteemed one of the beſt Sort of Peaches. This Tree is very tender, and will not ſucceed on common Stocks; ſo is budded twice as the *Mignon*; and if budded on Apricots, as was directed for that Sort, will thrive much better than in any other Method.

15. The *Bellegarde* (or as the *French* call it, the *Gallande*): This Tree has ſmooth Leaves; the Flowers are ſmall and contracted: the Fruit is very large and round, of a deep-purple Colour on the Side to the Sun: the Fleſh is white, melting, and ſeparates from the Stone, where it is of a deep-red Colour: the Juice is very rich: this ripens the Beginning of *September*, and is an excellent Peach; but at preſent not common.

16. The *Liſle* (or as the *French* call it, *La petite Violette hâtive*): This Tree has ſmooth Leaves: the

Flowers are ſmall and contracted: the Fruit is of a pale-yellow, and melting; but adheres to the Stone, where it is very red: the Juice is very vinous: this ripens the Beginning of *September*.

17. The *Bourdine*: This Tree has ſmooth Leaves: the Flowers are ſmall and contracted: the Fruit is large, round, and of a fine red Colour next the Sun: the Fleſh is white, melting, and ſeparates from the Stone, where it is of a fine red Colour: the Juice is vinous and rich: this ripens the Beginning of *September*, and is greatly eſteemed by the Curious. The Tree bears plentifully, and will produce Fruit in Standards very well.

18. The *Roſſanna*: This Tree has ſmooth Leaves: the Flowers are ſmall and contracted: the Fruit is large, a little more long than the Alberge: the Fleſh is yellow, and ſeparates from the Stone, where it is red: the Juice is rich and vinous: this ripens the Beginning of *September*, and is eſteemed a good Peach. This is the ſame with what ſome call the Purple, and others the red Alberge, it being of a fine purple Colour on the Side next the Sun.

19. The Admirable: This Tree has ſmooth Leaves: the Flowers are ſmall and contracted: the Fruit is large, round, and red on the Side next the Sun: the Fleſh is white, melting, and ſeparates from the Stone, where it is of a deep-red Colour: the Juice is ſugary and rich: this ripens the Beginning of *September*. This is by ſome call'd the early Admirable: but is certainly what the *French* call *L'Admirable*; and they have no other of this Name which ripens later.

20. The old *Newington*: This Tree has ſawed Leaves: the Flowers are large and open: the Fruit is fair and large, of a beautiful red Colour next the Sun: the Fleſh is white, melting, and cloſely adheres to the Stone, where it is of a deeper-red Colour: the Juice is very rich and vinous. This is eſteemed one of the beſt Sort of Pavies: it ripens about the Middle of *September*.

21. The *Rambouillet* (commonly call'd the *Rumbullion*): This Tree has ſmooth Leaves: the Flowers are large and open: the Fruit is of a middling Size, rather round than long, deeply divided by a *Sulcus* or Furrow in the Middle: it is of a fine red Colour next the Sun; but of a light-yellow next the Wall: the Fleſh is melting, of a bright-yellow Colour, and ſeparates from the Stone, where it is of a deep-red Colour: the Juice is rich, and of a vinous Flavour: this ripens the Middle of *September*, and is a good Bearer.

22. The *Bellis* (which I believe to be what the *French* call *La Belle de Vitry*): The Leaves of this Tree are ſawed: the Flowers are ſmall and contracted: the Fruit is of a middle Size, round, and of a pale-red next the Sun: the Fleſh is white, and adheres to the Stone, where it is red: the Juice is vinous and rich: this ripens in the middle of *September*.

23. The *Portugal*: This Tree has ſmooth Leaves: the Flowers are large and open: the Fruit is large, and of a beautiful red Colour toward the Sun: the Skin is generally ſpotted: the Fleſh is firm, white, and cloſely adheres to the Stone, where it is of a faint-red Colour: the Stone is ſmall, but full of deep Furrows: the Juice is rich and vinous: this ripens the Middle of *September*.

24. *Le Teton Venus* (or *Venus*'s Breaſt), ſo call'd from its having a Riſing like a Dug, or Bubby: This

Tree has ſmooth Leaves: the Flowers are ſmall and contracted: the Fruit is of a middling Size reſembling the Admirable, of a pale-red Colour next the Sun: the Fleſh is melting, white, and ſeparates from the Stone, where it is red: the Juice is ſugary and rich: this ripens late in *September*.

25. *La Pourprée* (or as the *French* call it *Pourprée tardive*, *i. e.* the late Purple): This Tree has very large Leaves, which are ſawed: the Shoots are very ſtrong: the Flowers are ſmall and contracted: the Fruit is large, round, and of a fine purple Colour: the Fleſh is white, melting, and ſeparates from the Stone, where it is red: the Juice is ſugary and rich: this ripens late in *September*.

26. The *Nivette:* This Tree has ſawed Leaves: the Flowers are ſmall and contracted: the Fruit is large, ſomewhat longer than round, of a bright-red Colour next the Sun, and of a pale-yellow on the other Side: the Fleſh is melting, and full of a rich Juice; and is very red at the Stone, from which it ſeparates: this is eſteemed one of the beſt Peaches: it ripens in the middle of *September*.

27. The Royal (*La Royale*): This Tree has ſmooth Leaves: the Flowers are ſmall and contracted: the Fruit is large, round, and of a deep-red on the Side next the Sun, and of a paler Colour on the other Side: the Fleſh is white, melting, and full of a rich Juice: it parts from the Stone, where it is of a deep-red Colour: this ripens the middle of *September*; and, when the Autumn is fine, is an excellent Peach.

28. The *Perſique:* This Tree has ſawed Leaves: the Flowers are ſmall and contracted: the Fruit is large, oblong, and of a fine red Colour next the Sun: the Fleſh is melting, and full of a rich Juice; it ſeparates from the Stone, where it is of a deep-red Colour: the Stalk has a ſmall Knot upon it: this makes a fine Tree, and is a good Bearer: it ripens the End of *September*. Many Gardeners call this the *Nivette*.

29. The monſtrous Pavy of *Pomponne* (call'd by the *French Le Pavie rouge de Pomponne*): the Leaves of this Tree are ſmooth: the Flowers are large and open: the Fruit is very large and round, many times fourteen Inches in Circumference: the Fleſh is white, melting, and cloſely adheres to the Stone, where it is of a deep-red Colour: the Outſide is a beautiful red next the Sun, and of a pale Fleſh-colour on the other Side: this ripens the End of *October*, and, when the Autumn is warm, is an excellent Peach.

30. The *Catharine:* This Tree has ſmooth Leaves: the Flowers are ſmall and contracted; the Fruit is large, round, and of a dark-red Colour next the Sun: the Fleſh is white, melting, and full of a rich Juice: it cloſely adheres to the Stone, where it is of a deep-red Colour: it ripens the Beginning of *October*; and in very good Seaſons is an excellent Peach: but being ſo very late ripe, there are not many Situations where it ripens well.

31. The Bloody Peach (call'd by the *French La Sanguinolle*): This Peach is of a middling Size, of a deep-red next the Sun: the Fleſh is of a deep-red quite to the Stone; and from thence is, by ſome Gardeners, call'd the Mulberry-peach. This Fruit rarely ripens in *England*; ſo is not often planted: but this Fruit bakes and preſerves excellently; for which, as alſo the Curioſity, one or two Trees may be planted, where there is Extent of Walling.

There are ſome other Sorts of Peaches which are kept in ſome of the Nurſeries; but thoſe which are here enumerated, are the Sorts moſt worth planting; and in the Liſt the choiceſt only ſhould be planted: but I ſhall juſt mention the Names of thoſe Sorts omitted, for the Satiſfaction of the Curious

The *Sion*; the *Bourdeaux*; the *Swalch* or *Dutch*; the *Carliſle*; the *Eton*; the *Péche de Pau*; Yellow Admirable; the Double-flower. This laſt Sort is generally planted more for the Beauty of the Flowers, than for the Goodneſs of the Fruit; of which ſome Years the Standard-trees produce great Plenty; but they are late ripe, and have a cold watry inſipid Juice. The dwarf Peach is alſo preſerved in ſome Places as a Curioſity. This is a very tender Tree, making very weak Shoots, which are very full of Flower-buds. The Fruit is not ſo large as a Nutmeg, and not good, nor will the Tree laſt any time; ſo it is not worth cultivating.

And indeed, from theſe thirty-one above-named, there are not above ten of them which I would adviſe to be planted; becauſe when a Perſon can be furniſhed with thoſe which are good, or has the beſt of the Seaſon, it is not worth while to plant any which are middling or indifferent, for the ſake of Variety: therefore the Sorts which I ſhould prefer are theſe after-mentioned:

The *early Purple*; the *Groſſe Mignon*; *Belle Chevreuſe*; Red *Magdalen*; *Chancellor*; *Bellegarde*; *Bourdin*; *Roſſanna*; *Rambouillet*; and *Nivette*. Theſe are the Sorts beſt worth planting; and as they ſucceed each other, ſo they will furniſh the Table thro' the Seaſon of Peaches: and where there is room, and the Situation very warm, one or two Trees of the *Catharine* Peach ſhould have Place; for in very warm Seaſons it is an excellent Fruit.

The *French* diſtinguiſh thoſe we call Peaches into two Sorts; *viz.* *Pavies* and *Peaches*; thoſe are call'd Peaches which quit the Stone; and thoſe whoſe Fleſh cloſely adheres to the Stone, are call'd Pavies: theſe are much more eſteem'd in *France* than the Peaches; tho' in *England* the latter are preferr'd to the former by the generality of Perſons.

The *French* alſo diſtinguiſh them into Male and Female; the Pavies they make to be the Male, and the Peaches the Female: but this Diſtinction is without Foundation, ſince the Kernels of both Sorts will produce Trees equally: for the Flowers of Peach-trees are generally Hermaphrodite, and have all the Parts of Generation in them; ſo that there is no Neceſſity of ſuppoſing any of them to be intirely Male or Female: but it is likely, that this Diſtinction is of long ſtanding, before Perſons had a perfect Notion of Male and Female in Plants, or at leaſt they did not know how to diſtinguiſh them aſunder.

The Nectarines (as I have in another Place ſaid) are by the *French* call'd *Brugnons*, which differ from the other two Sorts, in having a firm hard Fleſh, and the Skins quite ſmooth, without any Down upon them. The Sorts of theſe I have already mention'd under the Article *Nectarines*, to which the Reader may readily turn: therefore I ſhall not repeat them in this Place.

I ſhall now ſet down the good Qualities of Peaches, by which any Perſon may judge of their Worth.

A good Peach ought to have a firm Fleſh: the Skin ſhould be thin, of a deep or bright-red Colour next the Sun, and of a yellowiſh Caſt next the Wall: the Fleſh ſhould be of a yellowiſh Colour, full of Juice, which ſhould be high-flavour'd: the Stone ſmall, and the Pulp or Fleſh very thick. When a Peach hath all theſe Qualities, it may be eſteem'd a valuable Fruit.

All the different Sorts of Peaches have been originally obtain'd from the Stones; which, being planted, produce new Varieties, as do the Seeds of all other Fruits; ſo that where Perſons have Garden enough to allow room for propagating theſe Fruits from Seeds, there is no doubt but many good Sorts may be obtain'd, which will be better adapted to our Climate than ſuch as are brought from warmer Countries; tho' it is true, that there will be many of them good for nothing, as is the Caſe of moſt Fruits and Flowers which are produc'd from Seeds, amongſt which there may be ſome valuable Kinds, ſuperior to thoſe from whence the Seeds were taken; yet there is always a great Number which are little worth: but if we can obtain only two or three valuable Sorts, it is ſufficient to make amends for the Trouble of raiſing them: but where Perſons are ſo curious as to plant the Stones of theſe Fruits, great Regard ſhould be had to the Sorts; and if the Fruit were permitted to remain upon the Trees until they dropp'd off, the Kernels would be fitter for planting, and more likely to grow. The beſt Sorts for ſowing are thoſe whoſe Fleſh is firm, and cleaves to the Stone; and from amongſt theſe you ſhould chooſe ſuch as ripen pretty early, and have a rich vinous Juice; from which Sorts ſome good Fruit may be expected.

Theſe Stones ſhould be planted in Autumn, on a Bed of light dry Earth, about three Inches deep, and four Inches aſunder; and in the Winter the Beds ſhould be cover'd, to protect them from the Froſt, which, if permitted to enter deep into the Ground, will deſtroy them: in the Spring, when the Plants come up, they ſhould be carefully clear'd from the Weeds, which ſhould alſo be obſerv'd throughout the Summer; and if the Spring ſhould prove very dry, if you refreſh them now-and-then with a little Water, it will greatly promote their Growth: in this Bed they ſhould remain until the following Spring, when they ſhould be carefully taken up, ſo as not to break their tender Roots, and tranſplanted into a Nurſery, in Rows three Feet aſunder, and eighteen Inches diſtant Plant from Plant in the Rows; obſerving to lay a little Mulch upon the Surface of the Ground about their Roots, to prevent its drying too faſt: and if the Spring ſhould prove very dry, you ſhould give them a little Water once a Week, until they have taken Root; after which, they ſhould be conſtantly kept clear from Weeds, and the Ground between the Rows carefully dug every Spring, to looſen it, ſo as that the tender Fibres may ſtrike out on every Side.

In this Nurſery they may continue two or three Years; after which, they ſhould be tranſplanted where they are to remain, to produce Fruit.

In removing theſe Trees, you ſhould obſerve to prune their downright Roots (if they have any) pretty ſhort, and to cut off all bruiſed Parts of the Roots, as alſo all the ſmall Fibres, which do generally dry, and, when left upon the Roots after planting again, grow mouldy, and decay; ſo that they are injurious to the new Fibres which are ſhot out from the Roots, and very often prevent the Growth of the Trees: but you ſhould by no means prune their Heads; for the Plants which are produced from Stones, are generally of a more ſpongy Texture, and ſo more liable to decay when cut, than thoſe which are budded upon other Stocks. Beſides, as theſe Trees are deſigned for Standards (for it is not proper to plant them againſt Walls, until you ſee the Produce of their Fruit, to ſhew which of them deſerves to be cultivated), ſo they will never require any other Pruneing, but only to cut out decayed Branches, or ſuch as ſhoot out very irregular from the Sides; for more than this, is generally very injurious to them.

In planting theſe Trees, it will be the better way to diſpoſe them ſingly in the Quarters of the Kitchen-garden, where they will thrive, and produce Fruit, much better than if they are planted pretty near each other in Rows; and as they are thus ſingly diſpoſed, they will not do much Injury to the Crops which grow under them.

When they have produced Fruit, you will ſoon be a Judge of their Goodneſs: therefore ſuch of them as you diſlike, may be deſtroy'd; but thoſe which are good, may be propagated by inoculating them upon other Stocks, which is the common Method now practiſed to propagate theſe Fruits: therefore I ſhall now proceed to treat of that more particularly; in doing which, I ſhall ſet down the Method now commonly practiſed by the Nurſery-gardeners; and then propoſe ſome few Things of my own, as an Improvement thereon, for ſuch Perſons who are very curious to have good Fruit. But, firſt,

You ſhould be provided with Stocks of the Muſcle and White Pear-plums, which are generally eſteem'd the two beſt Sorts of Plums for Stocks to inoculate Peaches and Nectarines upon; as alſo ſome Almond and Apricot-ſtocks, for ſome tender Sorts of Peaches, which will not grow upon Plum-ſtocks: theſe ſhould be all produced from the Stone (as hath been already directed in the Article of a *Nurſery*), and not from Suckers, for the Reaſons there laid down.

When theſe Stocks have grown in the Nurſery two Years, they will be ſtrong enough to bud; the Seaſon for which is commonly about *Midſummer*, or any time in *July*, when the Rind will eaſily ſeparate from the Wood; when you ſhould make choice of ſome good Cuttings of the Sorts of Fruit you intend to propagate, always obſerving to take them from healthy Trees, and ſuch as generally produce a good Quantity of well-taſted Fruit; for it is very certain, that any Sort of Fruit may be ſo far degenerated, where this Care is wanting, as not to be like the ſame Kind. Beſides, whenever a Tree is unhealthy, the Buds taken from that Tree will always retain the Diſtemper, in a greater or leſs Degree, according as it hath imbibed a greater or leſs Quantity of the diſtemper'd Juice. Thus, for Inſtance, where a Peach or Nectarine-tree hath been greatly blighted, ſo as that the Shoots have grown buſled, and the Leaves curled up to a great degree, that Diſtemper is ſeldom recover'd again by the greateſt Art, or at leaſt not under ſeveral Years Management; for let the Seaſons prove ever ſo favourable, yet theſe Trees will continually ſhew the ſame Diſtemper; which many Perſons are ſo weak as to ſuppoſe a freſh Blight; whereas in reality it is no other but the Remains of the former Sickneſs, which are ſpread and intermix'd with all the Juices of the Tree; ſo that whatever Buds are taken from ſuch Trees, will always retain a Part of the Diſtemper.

Upon the Care which is taken in the Choice of the Buds, the whole Succeſs depends; therefore a Perſon who is curious to have good Fruit, cannot be too careful in this Particular: for, in general, no more is regarded by thoſe Nurſery-men who are the moſt careful in propagating the ſeveral Sorts of Fruit-trees, than the taking their Buds or Grafts from the true Kinds of Fruit-trees: but there is ſtill more Care required to have ſound healthy Trees, eſpecially in this of Peach and Nectarines: for if the Buds are taken from young Plants in the Nurſery, which have not produced Fruit, the Shoots of which are generally very ſtrong and vigorous, theſe Buds will have ſo vicious an Habit, as rarely to be corrected, and brought into good Order: for they will ſhoot more like the Willow than the Peach; the Joints being extended to a great Diſtance from each other, the Shoots very groſs, and the Wood pithy: therefore where the Practice of takeing the Buds from Nurſery-trees is long continued, there can be little Hopes of the Trees ſo raiſed. I would therefore recommend it to all curious Perſons, to procure their Buds from ſuch Trees as have been long growing, whoſe Fruit are well-flavoured, and the Trees perfectly ſound; as alſo never to make choice of the ſtrongeſt or moſt luxuriant Shoots of theſe Trees, but ſuch Shoots as are well-condition'd, and whoſe Buds grow pretty cloſe together. And altho' theſe do not make ſo ſtrong Shoots the following Year, as thoſe which are taken from luxuriant Branches, yet they will be better diſpoſed to bear Fruit, and will make much better Trees.

The Cuttings with which you are thus to be provided, ſhould always be taken from the Trees either in a Morning or Evening, or elſe in a cloudy Day; for if they are cut off when the Sun is very hot, the Shoots will perſpire ſo freely, as to leave the Buds deſtitute of Moiſture; which is often the Cauſe of their miſcarrying: and the ſooner they are uſed when cut from the Trees, the better they will take. The manner of this Operation being fully explain'd under the Article of *Inoculation*, I ſhall not repeat it in this Place. The Management of theſe Trees, during their remaining time in the Nurſery, is likewiſe fully ſet down under that Article. I ſhall therefore proceed to the Planting of theſe Trees, either againſt Walls, Eſpaliers, or for Standards. But as the future Succeſs of theſe Trees in a great meaſure depends upon the Soil in which they are planted, I ſhall briefly ſet down the Method of preparing the Earth for the Borders where they are deſigned to grow.

The beſt Earth for Peach-trees is ſuch as is taken from a Paſture-ground, that is neither too ſtiff and moiſt, nor over-dry; but of a middling Nature. This ſhould be dug from the Surface of the Ground about ten Inches deep, taking the Turf with it; and ſhould be laid in Heaps eight or ten Months at leaſt; but that which is prepared one Year, is ſtill better before it be uſed; during which time it ſhould be often turn'd, to rot the Turf, and break the Clods; whereby it will be render'd very light, and eaſy to work; and about the Beginning of *September* you ſhould carry it into the Garden, and make the Borders, which muſt be raiſed in Height proportionable to the Moiſture of the

Garden; for if the Ground be very wet, it will be adviſeable to lay ſome Rubbiſh in the Bottom of the Border to drain off the Moiſture, and to prevent the Roots of the Trees from running downward; then raiſe the Border of Earth at leaſt a Foot, or in very wet Land two Feet, above the Level of the Ground, ſo that the Roots of the Trees may always remain dry: but if the Ground be pretty dry, the Borders ſhould not be raiſed above ſix or eight Inches higher than the Surface; which will be ſufficient to allow for their ſinking.

As to the Breadth of theſe Borders, that can't be too great; but they ſhould never be leſs than ſix or eight Feet broad where Fruit-trees are planted: for when the Borders are made very narrow, the Roots of the Trees will be ſo confin'd in four or five Years time, that they will ſeldom thrive well after. The Depth of theſe Borders ſhould not be greater than two Feet; for where they are prepared to a great Depth, it only entices the Roots of the Trees downward, which may be the Cauſe of their future Barrenneſs; for their Roots, being got down below the Influences of the Sun and Showers, imbibe a great Quantity of crude Juices; which only add to the luxuriant Growth of the Trees, and deſtroy their Fruitfulneſs: beſides, whatever Fruit are produced from ſuch Trees, are not near ſo well-taſted, as are thoſe which grow upon thoſe Trees whoſe Roots lie near the Surface, and enjoy the kindly Benefit of the Sun's Heat, to correct and digeſt whatever Crudities there may be in the Earth.

Your Borders, being thus prepared, ſhould lie about three Weeks or a Month to ſettle; by which time the Seaſon for Planting will be come, which ſhould be perform'd as ſoon as the Leaves begin to decay, that the Trees may take Root before the Froſt comes on to prevent them. In the Choice of the Trees, if they are to be procured from a Nurſery, never take ſuch as have large luxuriant Shoots, or that ſtand in the Middle of the Nurſery; but rather thoſe which grow near the Outſide, whoſe Shoots are generally of a red Colour, and the Joints cloſe together: for thoſe which have produced very large Shoots, when they are cut down, very often die after the Knife; or if they do ſhoot, they commonly produce luxuriant Branches, which are not diſpoſed for Bearing. Then you ſhould carefully take up the Trees out of the Nurſery, ſo as not to break or bruiſe their Roots; and with a ſharp Knife you muſt prune the extreme Parts of them, and cut off ſmooth any broken or bruiſed Roots; as alſo all the ſmall Fibres ſhould be taken off, for the Reaſons before given.

And having thus prepared your Trees, you ſhould meaſure out their Diſtance, which ought never to be leſs than twelve Feet; but where the Ground is very good, they ſhould be planted fourteen Feet aſunder. This, I doubt not, will be thought too great a Diſtance by many Perſons, eſpecially ſince it is contrary to the general Practice at this time: but I am ſatisfied, whoever ſhall try the Experiment, will find it no more than is ſufficient for theſe Trees, where they are rightly managed; for if they take kindly to the Soil, their Branches may be ſo train'd, as to furniſh all the lower Part of the Wall in a few Years; which is what ſhould be principally regarded, and not, as is too often the Practice, run up the Shoots in Height, and leave all the lower

Part of the Tree deſtitute of bearing Wood; ſo that, in a few Years, there will not be any Fruit but upon the upper Part of the Trees; which alſo muſt be the Caſe where they are planted too cloſe; becauſe there being no room to extend the Branches on either Side, they are obliged to lead them upright; which produces the before-mentioned ill Effect.

There may alſo be ſome Perſons, who may think this Diſtance too ſmall for theſe Trees; becauſe Plums, Cherries, and moſt other Sort of Fruit-trees, require much more room: but when it is conſider'd, that Peach and Nectarine-trees produce their Fruit only upon the former Year's Wood, ſo that the Shoots of theſe Trees muſt be annually ſhortened in every Part of them, to obtain bearing Wood, therefore the Trees may be kept in much leſs Compaſs than thoſe of any other Sort of Fruit, and thereby every Part of the Wall may be conſtantly ſupplied with bearing Branches: for when the Trees are planted at a great Diſtance, the Branches are often extended to ſuch Lengths, as to leave the Middle of the Trees naked.

And here I can't help taking notice of another very great Error in planting Wall-fruit; which is, the placing Standard or Half-ſtandard-trees between the others, to cover the upper Part of the Wall, and to produce Fruit, until the Trees underneath are grown up ſufficient to furniſh the Walls, when the Standards are to be taken away. This is done without conſidering, that the greater Number of Trees which are planted in a ſmall Compaſs, the leſs Nouriſhment they can receive, and ſo, conſequently, muſt be the weaker; for the ſame Space of Ground can't nouriſh twenty Trees equally as well as it could ten: ſo that whatever Strength the Standard-trees may have, the Dwarfs will be proportionably weaker: and it is a common Obſervation, that moſt Trees extend their Roots as far under-ground, as their Branches ſpread above-ground; ſo that there ſhould always be the ſame Allowance given to the Wall-trees, if we would have them ſtrong and vigorous; therefore the building very high Walls for Fruit is to no Purpoſe; for a ten or twelve Feet Wall will be ſufficient for moſt Sorts of Fruit, except Pears.

But to return to Planting: After you have mark'd out the Places where each Tree is to ſtand, you muſt with your Spade make an Hole wide enough to receive the Roots of the Tree; then you ſhould place it down, obſerving to turn the Bud outward, that the wounded Part of the Stock may be hid; and let the Stem of the Tree be placed about four or five Inches from the Wall, with its Head inclining thereto; then fill in the Earth with your Hands, obſerving to break the Clods, that the Earth may fall in between the Roots, ſo as no void Spaces may be left about them. You ſhould alſo gently ſhake the Tree with your Hands, to ſettle the Earth down the better; then with your Foot gently preſs down the Earth about the Stem; but do not tread it down too hard, which is many times a very great Fault: for when the Ground is inclinable to bind, the treading of it cloſe doth often render the Ground ſo hard, as that the tender Fibres of the Roots can't ſtrike into it; whereby the Tree remains at a Stand for ſome time; and if the Earth be not looſen'd in time, it frequently dies: ſo that whenever you obſerve the

Earth of your Border to be bound, either by great Rains, or from any other Cauſe, you ſhould fork and looſen it again; obſerving always to do it in dry Weather, if in Winter or Spring; but in Summer it ſhould be done in a moiſt Seaſon.

Although I have here given Directions for the Choice of Trees from the Nurſery, after the uſual Method of planting theſe Trees; which is, that of taking ſuch as have made one Year's Shoot; yet I would prefer thoſe which were budded the preceding Summer, and have made no Shoot; for if the Bud is ſound and plump, and the Bark of the Stock well cloſed, where the Bud is inſerted, there will be no Danger of its growing; and when the Bud has ſhot to the Length of five or ſix Inches, if it is ſtopp'd by pinching off the Top, it will put out lateral Branches, which may be trained to the Wall; and this will prevent any cutting off the Head: for theſe Trees do not care for thoſe large Amputations, eſpecially ſome of the more tender Sorts. And by this Method of planting theſe Trees in Bud, no time will be loſt; when it is conſidered, that the Trees which have ſhot, muſt be cut down, and there is an Hazard of their ſhooting again: therefore I am convinced from Experience, that it is the beſt Method.

After you have thus planted your Trees, you ſhould faſten their Heads to the Wall, to prevent their being ſhaken by the Wind; which would diſturb their Roots, and break off the tender Fibres ſoon after they were produced, to the no ſmall Prejudice of the Trees: you ſhould alſo lay ſome Mulch upon the Surface of the Ground about their Roots, before the Froſt ſets in, to prevent it from penetrating the Ground; which would injure, if not deſtroy, the ſmall Fibres.

Theſe Things being duly obſerved, they will require no farther Care till the *February* following; toward the Latter-end of which Month, or the Beginning of *March*, according as the Seaſon is earlier or later, you muſt cut off the Heads of the new-planted Trees, leaving only four or five Eyes above the Bud; in doing of which, you muſt be very careful not to diſturb their Roots: to prevent which, you ſhould place your Foot down cloſe to the Stem of the Tree, and take faſt hold of that Part of the Stock below the Bud with one Hand, to hold it ſteady, while with the other Hand you gently ſlope off the Head of the Tree with a ſharp Knife at the intended Place, which ſhould always be juſt above an Eye: this ſhould always be done in dry Weather; for if there ſhould be much Rain ſoon after it is done, the Wet will enter the wounded Part, and damage the Tree: nor ſhould it be done in froſty Weather, for the ſame Reaſon; for that would enter the wounded Part, and prevent its healing over. After you have headed the Trees, you ſhould gently looſen the Earth of the Borders, to admit the Fibres of the Roots: but you muſt be very careful, in doing of this, not to cut or bruiſe their new Roots, which would alſo damage them: and if the Mulch which was laid about their Roots in Autumn be rotten, you may dig it into the Border at ſome Diſtance from the Roots of the Trees; and when the dry Weather comes on, you ſhould pare off ſome Turf from a Paſture-ground, which ſhould be laid upon the Surface of the Border about the Roots of the Trees, turning the Graſs downward: which will preſerve a gentle Moiſture in the Earth, better than any other Sort of Mulch: and this will not harbour Inſects, as moſt Sorts of Dung and Litter do, to the no ſmall Detriment of the Trees.

In watering of theſe Trees, you ſhould obſerve to do it with a Noſſel upon the Watering-pot, ſo as to let it out in Drops: for when it is haſtily pour'd down, it cauſes the Ground to bind; and if you water over the Head of the Tree, it will be of great Service to it. Your Waterings ſhould not be repeated too often, nor ſhould they be given in great Quantity; both which are very injurious to new-planted Trees.

In the middle of *May*, when theſe Trees will have ſeveral Shoots ſix or eight Inches in Length, you ſhould nail them to the Wall; obſerving to train them horizontally, rubbing off all fore-right Shoots, or ſuch as are weak, whereby thoſe which are preſerved will be much ſtronger: but if there are not more than two Shoots produced, and thoſe very ſtrong, you ſhould at the ſame time nip off their Tops; which will cauſe each of them to puſh out two or more Shoots, whereby the Wall will be better ſupplied with Branches: you muſt alſo continue to refreſh them with Water in dry Weather, during the whole Seaſon, otherwiſe they will be apt to ſuffer; for their Roots having but little hold of the Ground the firſt Year after tranſplanting, if the Seaſon ſhould prove very dry, it will greatly retard their Growth, if due care be not taken to water them.

In the Beginning of *October*, when you obſerve the Trees have done ſhooting, you ſhould prune them; in doing of which, you muſt ſhorten the Branches in proportion to the Strength of the Tree; which, if ſtrong, may be left eight Inches long; but if weak, ſhould be ſhorten'd to four or five: then you ſhould train them horizontally to the Wall (as was before directed), ſo that the Middle of the Trees may be void of Branches; for that Part of the Tree will be eaſily furniſhed with Wood afterwards; whereas, if the Shoots are train'd perpendicularly to the Wall, thoſe which are the ſtrongeſt will draw the greateſt Share of the Sap from the Roots, and mount upward: ſo that the Side-branches will be deprived of their Nouriſhment, and grow weaker, until they, many times, decay; and this is the Reaſon, that we ſee ſo many Peach-trees with one upright Stem in the Middle, and the two Sides wholly unfurniſhed with Branches; whereby the Middle of each Tree cannot produce any Fruit, that being fill'd with large Wood, which never produces any bearing Shoots: nor can the two Sides of the Trees be regularly fill'd with fruitful Branches, when this Defect happens to them; therefore this Method ſhould be carefully obſerv'd in the training up young Trees; for when they are permitted to run into Diſorder at firſt, it will be impoſſible to reduce them into a regular healthful State afterward, the Wood of theſe Trees being too ſoft and pithy to admit of being cut down again (as may be practis'd on many other hardy Fruit-trees, which will ſhoot out vigorouſly again); whereas theſe will gum at the Places where they are wounded, and in a few Years intirely decay.

The Summer following, when the Trees begin to ſhoot, you ſhould carefully look over them, to rub off all fore right Buds, or ſuch as are ill-placed, and train thoſe which are deſign'd to remain horizontally to the Wall, in their due Order as they are produced; for this is the principal Seaſon when you can beſt order the Trees as you would have them; whereas, if they are neglected until *Midſummer*, as is the common Practice, a great Part of the Nouriſhment will be exhauſted by fore-right Shoots, and other uſeleſs Branches, which muſt afterward be cut off; and hereby the remaining Shoots will be render'd very weak, and perhaps ſome Part of the Wall be intirely unfurniſh'd with Branches; which might have been eaſily ſupplied in the Beginning of *May*, by ſtopping ſome of the ſtronger Shoots in ſuch Parts of the Tree where there is a Neceſſity for more Branches; which would cauſe each of them to ſhoot out two or more Side-branches below the Ends of the Shoots, which may be guided into the vacant Parts of the Tree, as they are produced, ſo as that every Part may be regularly furniſh'd with proper Wood; which is the greateſt Beauty and Excellency of Wall-trees: but you ſhould always forbear ſtopping the Shoots in Summer, where there is not a Neceſſity for Branches to fill the Wall; for there cannot be a greater Fault committed, than that of multiplying the Number of Shoots, ſo as to cauſe a Confuſion, whereby the Branches will be too weak to produce good Fruit: beſides, when they are too cloſe laid in upon the Wall, the Air is excluded from the Shoots by the great Number of Leaves, ſo that they are never duly ripen'd; and conſequently, what Fruit is produc'd thereon, can't be ſo well-taſted as thoſe which are produc'd upon ſuch Trees where the Shoots receive all the Advantages of Sun and Air to maturate them.

Thus having ſet down the Method of training up young Trees, I ſhall now proceed to their Pruning, and future Management: which, being the ſame as with full-grown Trees, will ſerve for general Directions how to manage theſe Sorts of Fruit.

In the Pruning of Peach and Nectarine-trees (which require the ſame Management), the two following Rules ſhould be ſtrictly obſerved; *viz.* Firſt, That every Part of the Tree be equally furniſh'd with bearing Wood; and, Secondly, That the Branches are not laid in too cloſe to each other, for the Reaſons before laid down (with ſome others which will be hereafter inſerted). As to the firſt, it muſt be obſerv'd, That all theſe Trees produce their Fruit upon the young Wood, either of the preceding Year, or, at moſt, the two Years Shoots, after which Age they do not bear: therefore the Branches ſhould be pruned ſo as to cauſe them to produce new Shoots annually in every Part of the Tree; which cannot be done in the ordinary Method of Pruning, where Perſons neglect their Trees at the Seaſon when they are moſt capable of Management, which is in *April*, *May*, and *June*; at which time the luxuriant Growth of Branches may be check'd by pinching, and new Shoots produc'd where they are wanting, by ſtopping the neighbouring Branches; which Shoots, being produc'd at that Seaſon, will have time enough to ripen, and gain Strength, before the Autumn comes on; whereas all thoſe Shoots which are produc'd after the middle of *June*, will be crude and pithy; and though they may ſometimes produce a few Bloſſoms, yet thoſe rarely bring Fruit; nor are the future Branches good which are produced from ſuch Wood, the Veſſels being too large to ſtrain the Juices, ſo that they eaſily admit of great Quantities of crude Nouriſhment to paſs through them. Therefore thoſe Perſons who only regard their Wall-trees at two different Seaſons, *viz.* the Winter and Midſummer Pruning, cannot poſſibly have them in good Order; for when all the Branches which were produced in the Spring, are permitted to remain until the Middle or Latter-end of *June* (as is the common Practice), ſome of the moſt vigorous will draw the greateſt Part of the Nouriſhment from the weaker Branches; which, when the ſtrong ones are taken off, will be too weak to produce fair Fruit; and hereby the Strength of the Trees is exhauſted, to nouriſh the uſeleſs Branches, which are annually cut off again: and thus are too many Trees manag'd, and at the ſame time Complaints made of their Luxuriancy; becauſe two or three Shoots, by drawing in the greateſt Share of the Nouriſhment, grow very ſtrong and woody (whereas, if the Nouriſhment had been equally diſtributed to a regular Quantity of Branches, there would be no Sign of their too great Strength); until, by often cutting off theſe vigorous Branches, the Trees are either intirely deſtroy'd, or, at leaſt, render'd ſo weak as not to be able to produce Fruit: for although by thus weakening the Branches, it is often the means to produce a good Number of Bloſſoms (as may many times be obſerv'd alſo upon autumnal Shoots); yet the utmoſt of their Strength is ſpent in expanding the Flowers, ſo that they rarely produce Fruit; and very often the greateſt Part of the Branches die ſoon after; which is ſuppoſed to be occaſion'd by a Blight (as I have elſewhere ſaid) when in reality it is nothing leſs than the Fault of thoſe who have the Management of the Trees. It is therefore of the greateſt Conſequence to the Wall-trees, eſpecially of theſe Sorts, to go over them two or three times in the Months of *May* and *June* to rub off all irregular Shoots, and to train in the Branches that are left in due Order to the Wall, that each Shoot may have an equal Advantage of Sun and Air; both of which are abſolutely neceſſary to ripen and prepare the Wood for the next Year's Bearing.

And by duly obſerving the Trees at this Seaſon, there will not be Occaſion for ſo much Cutting, as is often practiſed on Peach-trees, to their great Injury; for their Wood-branches are generally ſoft, tender, and pithy, which, when greatly wounded, are not healed over again ſo ſoon as many other Sorts of Trees; and the Wet, inſinuating into the wounded Parts, doth often cauſe the Branches to canker and die; which may be intirely avoided by the gentle, eaſy Method of pinching and rubbing off the Buds in the Spring-ſeaſon, which never makes any Wounds on the Tree: and hereby a vaſt deal of Labour is ſaved; for one Perſon, who is ready at this Buſineſs, will go over a great Quantity of Walling in a Day; whereas if the Trees are permitted to grow rude all the Spring, they will require ſix times the Labour to reduce them into Order: beſides, it is a great Diſadvantage to the Fruit, in permitting the Branches of the Trees to extend from the Wall, and ſhade them: and when they have grown under the Shelter of theſe Branches and Leaves all the Spring, until *Midſummer*, then by pruning off and ſhortening moſt of theſe Shoots, and nailing the others cloſe to the Wall, the Fruits are ſuddenly expoſed to the Sun and Air, whereby they receive a very great Check, and are not only retarded in their Growth, but often rendered ill-taſted; and have tough Skins.

The Diſtance which the Branches of theſe Trees ſhould be allow'd againſt the Wall, muſt be proportion'd to the Size of the Fruit, or the Length of the Leaves: for if we obſerve how the Branches of Trees are naturally diſpoſed to grow, we ſhall always find them placed at a greater or leſs Diſtance, as their Leaves are larger or ſmaller, as I have already obſerved under the Article of *Leaves:* and there is no ſurer Guide to a curious Artiſt than Nature, from whence a Gardener ſhould always be directed in every Part of his Profeſſion; ſince his Buſineſs is to aid and aſſiſt Nature, where ſhe is not capable of bringing her Productions to Maturity; or where there is room, to make conſiderable Improvements by Art; which cannot be any otherwiſe effected, than by gently aſſiſting her in her own Way.

But to return to Pruning of theſe Trees: The Branches being carefully trained in, as before directed, in the Spring and Summer-ſeaſons, we come now to treat of the Winter-pruning, which is commonly performed in *February* or *March:* but the beſt Seaſon for this Work is in *October*, when their Leaves begin to fall, which will be early enough for their Wounds to heal, before the Froſt comes on; ſo that there will be no Danger of their being hurt thereby: and the Branches of the Trees being proportion'd to the Strength of the Roots at that Seaſon, all the aſcending Sap in the Spring will be employed to nouriſh only thoſe uſeful Parts of the Branches which are left; whereas, if they are left unpruned till *February*, the Sap in the Branches being then in Motion, as may be obſerved by the ſwelling of the Buds, the greateſt Part of it will be drawn up to the extreme Parts of the Branches, to nouriſh ſuch Bloſſoms as muſt be afterwards cut off: and this may be eaſily known by obſerving the ſtrongeſt Shoots at that Seaſon, when you will find the extreme Buds to ſwell faſter than moſt of the lower ones; for there being no Leaves then upon the Branches, to detain the Sap to nouriſh the lower Buds, the upper ones will always draw from thoſe below.

But it is a conſtant Practice amongſt Gardeners, founded upon long Experience, to prune weak Trees early in the Winter, and luxuriant Trees late in the Spring, in order to check their Luxuriancy. Now it is evident, that this Check does not proceed from any conſiderable Loſs of Sap at the Wounds of the pruned Tree (excepting a few of the bleeding Trees, when cut at that Seaſon); but muſt ariſe from ſome other Cauſe; for by ſeveral Experiments made by the Rev. Dr. *Hales*, in fixing Mercurial Gauges to the Stems of freſh cut Trees, he found thoſe Wounds were conſtantly in an imbibing State, except the Vine in the Bleeding-ſeaſon.

When a weak Tree is pruned early in the Beginning of Winter, the Orifices of the Sap-veſſels are cloſed up long before the Spring; and conſequently, when, in the Spring and Summer, the warm Weather advances, the attracting Force of the perſpiring Leaves is not then weakened by many Inlets from freſh Wounds; but is wholly exerted in drawing Sap from the Root: whereas, on the other hand, when a luxuriant Tree is pruned late in the Spring, the Force of its Leaves to attract Sap from the Root will be much ſpent and loſt, at the ſeveral freſh-cut Inlets.

Beſides, if it were no Advantage to the Trees to prune them at this Seaſon (which I think no one will have Reaſon to doubt, after making the Trial); but that it only ſucceeds as well as the Spring-pruning; yet there is a great Advantage in doing of it at *Michaelmas*; for that being a much more leiſure Seaſon with Gardeners than the Spring, they will have more time to perform it carefully; and then they will not have too many Things come together, which may require to be immediately executed: for the Spring being the principal Seaſon for cropping their Kitchen-gardens, and attending their Hot-beds, if they are diſengaged from the Buſineſs of Pruneing at that time, it will be of great Advantage, eſpecially where there is a great Quantity of Walling. And there is alſo another Benefit in Pruneing at this Seaſon; which is, the having the Borders at Liberty to dig and make clean before the Spring; ſo that the Garden may not appear in Litter at that Seaſon.

Having ſaid thus much concerning the time of Pruning, I ſhall now proceed to give ſome general Directions how it is to be performed on Peach and Nectarine-trees, which require a very different Management from moſt other Sorts of Fruits.

In Pruning of theſe Trees, you ſhould always obſerve to cut them behind a Wood-bud, which may be eaſily diſtinguiſhed from the Bloſſom-buds, that are ſhorter, rounder, and more turgid, than the Wood-buds: for if the Shoot have not a leading Bud where it is cut, it is very apt to die down to the next leading Bud; ſo that what Fruit may be produced above that, will come to nothing, there being always a Neceſſity of a leading Bud to attract the Nouriſhment; for it is not ſufficient that they have a Leaf-bud, as ſome have imagined, ſince that will attract but a ſmall Quantity of Nouriſhment; the great Uſe of the Leaves being to perſpire away ſuch crude Juices as are unfit to enter the Fruit: the Length you ſhould leave theſe Branches, ſhould be proportion'd to the Strength of the Tree, which, in an healthy ſtrong Tree, may be left ten Inches or more; but, in a weak one, they ſhould not be more than ſix Inches: however, in this you muſt be guided by the Poſition of a leading Bud; for it is better to leave a Shoot three or four Inches longer, or to cut it two or three Inches ſhorter, than we would chooſe to do, provided there be one of theſe Buds; it being abſolutely neceſſary for the future Welfare of the Tree: you ſhould alſo cut out intirely all weak Shoots, tho' they may have many Bloſſom-buds upon them; for theſe have not Strength enough to nouriſh the Fruit, ſo as to give it a kindly Flavour; but they will weaken the other Parts of the Tree.

In nailing the Shoots to the Wall, you muſt be careful to place them at as equal Diſtances as poſſible, that their Leaves, when come out, may have room to grow, without ſhading the Branches too much; and you ſhould never nail them upright, if it can be prevented; for when they are thus trained, they are very ſubject to ſhoot from the uppermoſt Eyes: and the lower Part of the Shoots will thereby become naked.

There is not any thing in the Buſineſs of Gardening, which has more exerciſed the Thoughts of the Curious, than how to preſerve their tender Sorts of Fruit from being blighted in the Spring of the Year; and yet there has been little written upon this Subject, which is worth Notice. Some Perſons have propoſed Mattreſſes of Straw or Reeds to be placed before the Fruit-trees againſt Walls, to prevent their being blaſted: others have directed the fixing horizontal Shelters in their Walls, to prevent the perpendicular Dew or Rain from falling upon the Bloſſoms of the Fruit-trees, which they ſuppoſed to be the chief Cauſe of their Blighting: but both theſe Contrivances have been far from anſwering the Expectations of thoſe Perſons who have put them in Practice, as I have elſewhere ſhewn; therefore it may not be improper to repeat ſome Things in this Place, which I have before mentioned, in relation to this Matter. And,

Firſt, I have already ſaid, that the Blights, which are ſo often complained of, do not ſo much proceed from any external Cauſe, or Inclemency in the Seaſon, as from a Diſtemper or Weakneſs in the Trees: for if we obſerve the Trees at that Seaſon, where they are the moſt ſubject to what is called a Blight, we ſhall find the Branches very ſmall, weak, and not half ripen'd, as alſo trained in very cloſe to each other; theſe Branches are, for the moſt part, full of Bloſſom-buds (which is chiefly occaſion'd by their want of Strength). Theſe Buds do indeed open; and, to Perſons not ſkill'd in Fruit-trees, ſhew a great Proſpect of a plentiful Crop of Fruits; whereas the whole Strength of the Branches is ſpent in nouriſhing the Flowers; and, being unable to do any more, the Bloſſoms fall off, and the ſmall Efforts of the Leaf-buds are check'd; ſo that, many times, the greateſt Part of the Branches die away; and this is called a great Blight: whereas at the ſame time it may be often obſerv'd, that ſome Trees of a different Sort, nay, even ſome of the ſame Sort, which were ſtronger, tho' placed in the ſame Soil, expoſed to the ſame Aſpect, and ſubject to the ſame Inclemency of Air, have eſcaped very well, when the weak Trees have appeared to be almoſt dead; which is a plain Indication, that it proceeds from ſome Cauſe within the Tree, and not from any external Blight: all this will therefore be remedied, by obſerving the foregoing Directions in the Pruning and Management of the Trees, ſo as never to overburden them with Branches, nor to ſuffer any Part of the Trees to exhauſt the whole Nouriſhment from the Root, ſo as to cauſe the other Parts to be very weak; but to diſtribute the Nouriſhment equally to every Shoot, that there may be none too vigorous, at the ſame time that others are too weak; and by continually rubbing off uſeleſs or foreright Shoots, as they are produced, the Strength of the Trees will not be ſpent, to nouriſh ſuch Branches as muſt be afterwards cut out, which is too often ſeen in the Management of theſe Trees. And,

Secondly, It ſometimes happens, that the Roots of theſe Trees are buried too deep in the Ground, which, in a cold or moiſt Soil, is one of the greateſt Diſadvantages that can attend theſe tender Fruits; for the Sap which is contained in the Branches, being by the Warmth of the Sun put ſtrongly into Motion early in the Spring, is exhauſted in nouriſhing the Bloſſoms; and a Part of it is perſpired thro' the Wood-branches, ſo that its Strength is loſt before the Warmth can reach to their Roots, to put them into an equal

Motion in Search of freſh Nouriſhment, to ſupply the Expence of the Branches; for want of which, the Bloſſoms fall off and decay, and the Shoots ſeem to be at a Stand, until the farther Advance of the Warmth penetrates to the Roots, and ſets them in Motion; when ſuddenly after, the Trees, which before look'd weak and decaying, do make prodigious Progreſs in their Shoots; and before the Summer is ſpent, are furniſhed with much ſtronger Branches than thoſe Trees which have the full Advantage of Sun and Showers, and that are more fruitful and healthy; which muſt certainly be owing to the former Obſervation, as alſo to their drawing in a great Quantity of crude Moiſture; which, tho' productive of Wood, is yet unkindly for Fruit: if, therefore, this be the Caſe, there is no way of helping this, but by raiſing up the Trees, if they are young; or, if they are too old to remove, it is the better way to root them out, and make new Borders of freſh Earth, and plant down young Trees; for it is a great Vexation to be at the Trouble and Expence of pruning and managing theſe Trees, without having the Pleaſure of reaping any Advantage from them: which will always be the Caſe where the Trees are thus injudiciouſly planted. Or,

Thirdly, This may proceed from the Trees wanting Nouriſhment, which is many times the Caſe, where they are planted in an hard gravelly Soil, in which it is the common Practice to dig Borders three or four Feet wide, and three Feet deep into the Rock of Gravel, which is filled with good freſh Earth, into which the Trees are planted, where they will thrive pretty well for two Years, until their Roots reach the Gravel, where they are confin'd, as if planted in a Pot; and for want of proper Nouriſhment, the Branches continually decay every Year. This cannot be help'd, where the Trees have been growing ſome Years, without taking them intirely up, or by digging away the Gravel from their Roots, and adding a large Quantity of freſh Earth, that may afford them a Supply of Nouriſhment: but where a Perſon intends to plant Fruit-trees upon ſuch a Soil, I would adviſe him never to dig into the Gravel; but, on the contrary, to raiſe the Borders at leaſt two Feet above it, with good freſh Earth; which, if made of a conſiderable Width, ſo that their Roots may have room to extend themſelves upon the Gravel, they will enjoy the kindly Influences of the Sun and Showers, and produce delicate well-flavour'd Fruit in plenty.

But if the Unfruitfulneſs of the Trees do not proceed from any of the before-mentioned Cauſes, and is the Effect of unkindly Seaſons, then the beſt Method yet known is, in froſty dry Weather, when little Dew falls, to ſprinkle the Branches of the Trees gently with Water in the bloſſoming Seaſon, and while the young-ſet Fruit is tender; which ſhould always be done before Noon, that the Moiſture may evaporate before the Night comes on; and if in the Night you carefully cover the Trees with Mats, Canvas, or ſome ſuch light Covering, it will be of great Service to them: however, where the Trees are ſtrong and vigorous, they are not ſo liable to ſuffer by a ſmall Inclemency, as are thoſe which are weak; ſo that there will be few Seaſons in which there may not be Hopes of a moderate Quantity from them; tho' there ſhould be no Covering uſed; for where theſe Coverings are uſed, if it is not performed with great Care and Diligence, it is much better to have no Covering, but truſt to the Clemency of the Seaſon: for if the Coverings are kept too cloſe, or continued too long, the Trees will receive more Injury hereby, than from being conſtantly expoſed; or if after they have been covered for ſome time, they are then incautiouſly removed, ſo as to expoſe the Trees too ſuddenly to the open Air, they will ſuffer more thereby than if they had not been covered: however, I muſt repeat in this Place what has been before mentioned, under another Article, of a Management which has been generally attended with Succeſs; which is, The putting up two Feather-edge Deal-boards, joined together, over the Top of the Trees, ſo as to form a Penthouſe, to caſt off perpendicular Wet: theſe ſhould be fixed up when the Trees begin to bloſſom, and ſhould remain till the Fruit is well ſet, when they ſhould be taken down, to admit the Dew and Rain to the Leaves and Branches of the Trees, which muſt not be longer kept off: and where the Wall is long, and is expoſed to Draughts or Currents of Wind, if at the Diſtance of forty Feet from each other are fixed ſome croſs Reed-hedges, to project about ten Feet from the Wall, theſe will break the Force of the Wind, and prevent its deſtroying of the Bloſſoms; and theſe may be removed away, as ſoon as the Danger is over: where theſe Things have been practiſed, they were generally attended with Succeſs; and as there will be no Trouble of covering and uncovering in this Method, after they are fixed up, there can be no Danger of Neglect, as very often is the Caſe when the Trouble is great, or to be often repeated.

When your Fruit is ſet, and grown to the Bigneſs of a Small-nut, you ſhould go over the Trees, and thin them, leaving them at leaſt five or ſix Inches aſunder; for when they are permitted to remain in Bunches, as they are often produced, the Nouriſhment which ſhould be employed wholly to the Fruits deſign'd to ſtand, will be equally ſpent amongſt the whole Number; a great Part of which muſt be afterward pulled off; ſo that the ſooner this is done, the better it will be for the remaining Fruit: and if it ſhould ſometimes happen, that a Part of thoſe left, by any Accident, ſhould be deſtroyed, yet the remaining ones will be much the larger and better-taſted for it; and the Trees will gain more Strength; for a moderate Quantity of Fruit is always preferable to a great Crop; the Fruit, when but few, will be much larger, better taſted, and the Trees in a Condition to bear well the ſucceeding Years: whereas when they are overcharged with Fruit, it is always ſmall, ill-taſted; and the Trees are generally ſo much weakened thereby, as not to be in a Condition to bear well for two Years after: ſo that, upon the Whole, it is much better to have a leſſer Number of Fruit than is commonly eſteemed a Crop, than to have too many; ſince the Fruit, and alſo the Trees, are benefited thereby. The Quantity of Fruit to be left on large full-grown Trees, ſhould never be greater than five or ſix dozen upon each; but on middling Trees, three or four dozen will be enough.

If the Seaſon ſhould prove hot and dry, it will be proper to draw up the Earth round the Stem of each Tree, to form an hollow Baſin, of about ſix Feet Diameter; and cover the Surface of the Ground in this

Baſſin with Mulch; and once or twice a Week, according to the Heat and Drought of the Seaſon, pour down ſixteen or eighteen Gallons of Water to the Root of each Tree; or where there is an Engine, which will diſperſe the Water in gentle eaſy Drops, like Rain, if the ſame, or a larger Quantity of Water, is ſprinkled all over the Branches of the Trees, this, ſoaking down to the Roots, will keep the Fruit conſtantly growing; which will prevent their falling off the Trees, as they generally do where this Method is not practiſed; and the Fruit, being thus conſtantly nouriſhed, will be much better taſted; and hereby the Trees will be maintained in Vigour; ſo that it is what I can, from long Experience, recommend as one of the moſt neceſſary Things to be practiſed by all Lovers of good Fruit.

When the Peach-trees are carefully managed in the Spring of the Year, according to the Rules before laid down, all the Nouriſhment which the Roots can ſupply will be uſefully employed in nouriſhing ſuch Shoots only as are to be continued, as alſo the Quantity of Fruit which is proper for each Tree; therefore both muſt of Conſequence be rendered better; for where there is not this Care, the Trees ſoon grow ragged, and are not furniſhed properly with Branches; and thoſe Shoots which are produced, are ſome very weak, and others very luxuriant, whereby the Trees are rendered very unſightly, as alſo unhealthy; and never continue many Years fruitful: and by thus training of the Branches to the Wall, as they are produced, the Fruit will be always equally expoſed to the Sun and Air; which in the common Method of managing theſe Trees, by letting their Branches grow rude all the Spring, they are deprived from; and conſequently do not receive the Benefit from theſe equal to thoſe which are properly managed: and by the timely rubbing off uſeleſs and luxuriant Shoots, it will ſave much Trouble, and prevent the Uſe of the Knife in Summer, which is very hurtful to theſe Trees; for there will be no need to ſhorten any of the Shoots in Summer.

When theſe Rules are duly executed, there will be no Occaſion to pull off the Leaves of the Trees, to admit the Sun to the Fruit, which is often practiſed; for if we conſider, that the Leaves are abſolutely neceſſary to cheriſh the Bloſſom-buds, which are always form'd at the Footſtalks of the Leaves, the pulling them off before they have perform'd the Office aſſign'd them by Nature, is doing great Injury to the Trees: therefore I caution every one againſt that Practice.

It is a common Opinion which has for ſome Years prevailed, even among Perſons of good Underſtanding, That Peach-trees are not long-liv'd; therefore ſhould be renewed every twenty Years: but this is a great Miſtake; for I have eaten ſome of the fineſt Peaches of various Kinds, which grew on Trees which had been planted above fifty Years: and I am convinced, by Experience, that when the Trees are budded upon proper Stocks, and carefully planted and managed, they may be continued fruitful and healthy ſixty Years and upward; and the Fruit produced on theſe old Trees will be much better flavour'd than any of thoſe upon young Trees: but I ſuppoſe the Foundation of the above Opinion was taken from the *French*, who generally bud their Peaches upon Almond-ſtocks, which are of ſhort Duration; theſe ſeldom laſting good more than twenty Years: but this being ſeldom practiſed in *England*, the Caſe is widely different; nor indeed ſhould we fetch our Examples from that Nation, where the Profeſſors of the Art of Gardening are at leaſt a Century behind the *Engliſh*; and, from their preſent Diſpoſition, ſeem unlikely to overtake them; for they depart from Nature in almoſt every Part of Gardening, and are more pleaſed with introduceing their little Inventions of pruning and managing their Fruit-trees, according to their own Fancy, than they are careful to draw their Inſtructions from Nature, from whence the true Art is to be obtained; ſo that in very few Inſtances Gardeners ſhould deviate from Nature, unleſs it be in thoſe Particulars, where Art may be practiſed to the greateſt Advantage; which is in the procuring many Sorts of eſculent Plants and Fruits earlier and better flavour'd than can be obtained without; in which they are extremely deficient; and herein they truſt too much to Nature, and uſe too little Art.

In one of the moſt celebrated of their Authors, who treats very particularly of Fruit-trees, there are Directions for planting of Peach-trees twelve Feet aſunder: and at the ſame time he adviſes the planting of Pear-trees but nine or ten Feet Diſtance; and yet he ſays, That a Pear tree in Health will ſhoot three Feet ón each Side every Year: therefore he does not allow room for theſe Trees to grow more than two Years before they meet. There is alſo another thing poſitively laid down by the ſame Author; which is, never to lay any Dung upon the Borders where Fruit-trees are growing; which he ſays will render the Fruit ill-taſted: and this Opinion has too generally prevailed in *England*; but this has been exploded by one of his own Countrymen, who affirms that, from upward of twenty Years Experience, thoſe Trees where the Borders had been conſtantly dung'd, always produced the moſt delicious Fruit; and the Trees were in the greateſt Vigour: and the ſame Gentleman mentions the Practice of the Gardeners at *Montreuil*, near *Paris*, who have for ſome Generations been famous for the Culture of Peaches; and are as careful to dung the Borders where their Peach trees grow every other Year, as the Kitchen-gardeners are for their Legumes.

And from a long Experience it is, that I can ſubſcribe to the Truth of this; for in ſome particular Gardens, where the beſt Fruit grew that I have yet taſted, the Ground was conſtantly dunged every other Year; therefore it is what I muſt recommend to the Practice of every curious Perſon; with this Caution, always to uſe ſuch Dung for their Borders, as is well rotted; and to dig it into the Borders in *November*, that the Rain may waſh down the Salts before the Spring comes on; and where the Ground is very looſe or ſandy, it will be the beſt way to make uſe of Neats-dung, which is cooler than that of Horſes; but for cold ſtrong Land the latter is to be preferr'd.

If the Ground is well trenched every Year, about the Roots of the Trees, it will be of great Service to them; and where the Soil is ſubject to bind very cloſe, if it is forked two or three times in a Year, to looſen the Surface, it will greatly help the Trees: the Borders ſhould not be crouded with any large-growing Plants, which will draw away the Nouriſhment from the Trees; therefore when any Sórt of Kitchen-herbs are planted on theſe Borders, they ſhould be only ſuch as are of ſmall Growth, and which may be taken off early in the Spring: and if this is carefully obſerved, the cultivating ſmall Things on theſe Borders can do no Harm; becauſe the Ground will be ſtirr'd the oftener, on account of theſe ſmall Crops, than perhaps it would have been, when no Uſe was to be made of the Borders. Theſe Rules which are here laid down, if properly obſerved, will direct any curious Perſon how to have plenty of good Fruit; as alſo to preſerve the Trees in Vigour a great Number of Years.

PERSICARIA, Arſe-ſmart.

The *Characters* are;

It is a Plant with an apetalous Flower, having ſeveral Stamina, *or Chives, which ariſe from the multifid* Calyx: *the Pointal afterward becomes an oval-pointed ſmooth Seed, incloſed in the Capſule, which was before the Flower-cup: to which may be added, It hath jointed Stalks, and the Flowers are produced in Spikes.*

The *Species* are;

1. PERSICARIA *mitis maculoſa. C. B. P.* Dead or Spotted Arſe-ſmart.
2. PERSICARIA *vulgaris acris, ſeu Hydro-piper. J. B.* Water-pepper, Lake-weed, or Arſe-ſmart.
3. PERSICARIA *major, lapathi foliis, calyce floris purpureo. Tourn.* Greater Arſe-ſmart, with Dock-leaves, and a purple Flower-cup.
4. PERSICARIA *Orientalis, Nicotianæ folio, calyce florum purpureo. T. Cor.* Eaſtern Arſe-ſmart, with a Tobacco-leaf, and a purple Flower-cup.

There are ſeveral other Species of this Plant, which grow wild upon moiſt Soils and Dunghils, in divers Parts of *England*: but as they are rarely cultivated in Gardens, and being Plants of no Uſe at preſent, I omit enumerating them in this Place.

The two firſt Sorts here mentioned are ſometimes uſed in Medicine; the latter of which is a very ſharp acrid Plant, from whence it had its Name of Water-pepper and Arſe-ſmart: this is a perennial Plant, which grows in great Plenty on the Sides of Ditches, and in moiſt Places, almoſt in every Part of *England*; and is a very bad Weed, if once it gets Poſſeſſion in a Garden; for the Roots extend themſelves greatly underground, and ariſe from every Joint, as doth Couch-graſs; ſo that it is with great Difficulty extirpated.

The firſt is an annual Plant, that propagates itſelf in great Plenty from Seeds; which falling upon the Ground, the Plants riſe the ſucceeding Spring, and ſpread over the Ground, where-ever they are permitted to grow; ſo that they ſhould not be ſuffered to remain in Gardens: theſe are both gathered in the Fields in Autumn for medicinal Uſe, when they are in Perfection.

The third Sort is cultivated in ſome curious Gardens for Variety, it makeing an handſome Appearance during the Seaſon of its Flowering: this may be propagated by ſowing the Seeds upon a Bed of rich moiſt Earth in Autumn, ſoon after they are ripe; and the Plants will come up the Spring following, when they may be tranſplanted into the Borders where they are to remain: this is alſo an annual Plant, which requires to be ſown every Year, or the Seeds permitted to ſhed, which will grow better than thoſe which are ſown by Art.

The fourth Sort was brought from the Eaſtern Country by Monſ. *Tournefort*, to the Royal Garden at *Paris*, from whence it hath been ſince communicated to ſeveral Parts of *Europe*. This Plant, tho' but an Annual, doth grow to be ten or twelve Feet high, and divides into ſeveral Branches, each of which produces a beautiful Spike of purple Flowers at their Extremities in the Autumn; which, together with its large green Leaves, and jointed Stalks, make a very grand Figure in the Borders of large Gardens, late in the Seaſon, when few other Plants are in Beauty.

The Seeds therefore ſhould be ſown in Autumn, as ſoon as they are ripe; or, if they are permitted to fall on the Ground, the Plants will come up the Spring following better than when they are ſown by Art, as was before obſerved; for if the Seeds are ſown in the Spring, it is very rare, that any of them ſucceed; and if ſome few Plants come up from thoſe Seeds ſown at that Seaſon, they ſeldom grow near ſo ſtrong as thoſe which are produced from the Seeds which fell in Autumn; ſo that there is no other Culture required to this Plant, but to tranſplant them out in the Spring, where they are deſign'd to ſtand, which ſhould be in large Gardens, giving them great Space; for if they are placed near other Plants, they will ſhade them intirely from the Sun; and, by continually dripping upon them, will greatly injure them; and if they ſtand too cloſe, their Beauty is greatly diminiſhed.

When the Plants begin to aſpire upward, which is commonly in *June*, their Side-ſhoots ſhould be pruned off, to make them advance in Height, and preſerve them within Compaſs; otherwiſe they are very ſubject to branch out widely on every Side, ſo as to become troubleſome in a Garden; but when they are pruned up regularly five or ſix Feet high, they may afterwards be permitted to ſhoot out Side-branches; ſince thoſe which are produced above that Height, will never be very long or troubleſome, but will add to the Beauty of the Plant: this delights in a rich moiſt Soil, upon which it will grow to a prodigious Height: it produces its Flowers in *Auguſt* and *September*, which continue in Beauty until the Froſt deſtroys them.

PERVINCA, Periwinkle.

The *Characters* are;

The Flower-cup conſiſts of one Leaf, which is divided into five long narrow Segments: the Flower alſo conſiſts of one Leaf, which expands into the Form of a Salver, and is cut into five broad Segments: the Pointal, which ariſes from the Centre of the Flower-cup, becomes a Fruit, compoſed of two Huſks (or Pods), which contain oblong cylindrical furrow'd Seeds: to which may be added, That this Plant ſhoots out many long creeping Branches, which ſtrike out Roots at their Joints.

The *Species* are;

1. PERVINCA *vulgaris anguſtifolia, flore cæruleo. Tourn.* Common or narrow-leav'd Periwinkle, with a blue Flower.

2. PERVINCA *vulgaris anguſtifolia, flore albo. Tourn.* Common Periwinkle, with a white Flower.

3. PERVINCA *vulgaris latifolia, flore cæruleo. Tourn.* Greater Periwinkle, with a blue Flower.

4. PERVINCA *vulgaris anguſtifolia, flore rubente. Tourn.* Common Periwinkle, with a rediſh Flower.

5. PERVINCA *vulgaris anguſtifolia, flore pleno, ſaturate purpureo. Tourn.* Common Periwinkle, with a double Flower, of a deep purple Colour.

6. PERVINCA *anguſtifolia vulgaris variegata ex aureo & viridi. Boerh Ind.* Common Periwinkle, with yellow ſtriped Leaves.

7. PERVINCA *anguſtifolia vulgaris variegata ex argenteo & viridi. Boerh. Ind.* Common Periwinkle, with ſilver-ſtriped Leaves.

The firſt Sort grows wild in divers Parts of *England*, and is not ſo much cultivated in Gardens at preſent as it was formerly, when it was planted for Edging of Borders; but the Shoots being very apt to root at their Joints, render'd it very difficult to preſerve in any tolerable Order; and the Plants, rooting deep in the Ground, greatly exhauſt the Goodneſs of the Soil; ſo that it is now almoſt wholly caſt out of Gardens.

The ſecond and fourth Sorts are Varieties from the firſt, differing only in the Colour of their Flowers; as are alſo the ſixth and ſeventh, which differ in their variegated Leaves, for which they are preſerv'd in the Gardens of thoſe who admire ſtriped Plants.

The fifth Sort produces fine double Flowers, which makes a very handſome Appearance during its Seaſon of Flowering; which renders it worthy of a Place in every Garden.

The third Sort grows much larger than the former, and produces large blue Flowers: this is found in Woods, and ſhady Places, in divers Parts of *England*.

All theſe Plants multiply exceedingly by their Shoots from the old Roots, which, trailing upon the Ground, ſtrike out Roots in a ſhort time, and may be taken off, and tranſplanted where they are to remain: and though they are not ſo proper for a Flower-garden, yet a few Roots of each Sort may be planted in ſhady Borders under Trees, where few other Plants will thrive, or in ſmall Wilderneſſes; in which Places, if they are kept within Compaſs, they make a pretty Variety. The large Sort may be planted under Hedges, in Woods, *&c.* where it will grow four or five Feet high, and continue a long time in Flower.

Theſe Plants propagate themſelves by Roots ſo plentifully, that they ſeldom produce Fruit.

Monſ. *Tournefort* ſays, He could never obſerve any Fruit upon them either in the Country adjoining to *Paris*, or in *Provence* or *Languedoc*, where they are very common, or in the Neighbourhood of *Liſbon*.

Of all the Botanical Writers before *Tournefort*, *Cæſalpinus* is the only Perſon who found and deſcribed this Fruit: which, he ſays, is oblong, being two fork'd Huſks, arch'd and conjoin'd at their Extremities, containing, for the moſt part, two oblong Seeds in each.

To have this Plant produce Fruit, Monſ. *Tournefort* adviſes its being planted in a Pot that contains but a ſmall Quantity of Earth; ſo that the Sap, being prevented from diſſipating and ſpending itſelf upon nouriſhing new Shoots, will mount the Stems, and ſwell the Pointal, which becomes the Fruit; and this, he ſays, was the Method whereby he obtain'd the Fruit of this Plant, of which he has given a Figure in his *Elements of Botany*.

But notwithſtanding what Monſ. *Tournefort* has related concerning this Matter, yet I have often obſerv'd the Fruit upon ſuch Plants as have grown ſingly on a good Soil; though where their Shoots are permitted to entangle with each other, and grow very cloſe, there is ſeldom any Fruit produc'd.

PETASITIS, Butter-bur.

The *Characters* are;

It is a Plant with a floſculous Flower, conſiſting of many Florets, divided into many Parts, ſitting on the Embryo, and contained in a cylindrical Empalement, divided alſo into many Parts: the Embryo afterward becomes a Seed furniſh'd with Down:

to which may be added, The Flowers appear before the Leaves.

The *Species* are;

1. PETASITES *major & vulgaris. C. B. P.* Common Butter-bur, or Peſtilent-wort.

2. PETASITES *major, floribus pediculis longis inſidentibus. Raii Syn.* Greater Butter-bur, with long Foot-ſtalks to the Flowers.

3. PETASITES *albus, anguloſo folio. J. B.* White Butter-bur, with angular Leaves.

4. PETASITES *minor alter, tuſſilaginis folio. H. R. Par.* Leſſer Butter bur, with a Colt's-foot leaf.

The firſt Sort here mention'd is us'd in Medicine: this grows wild in great Plenty by the Sides of Ditches, and in moiſt Soils, in divers Parts of *England*. The Flowers of this Plant appear in the Beginning of *March*; and after they are paſt, the green Leaves come up, and grow to be very large.

The ſecond Sort was found by Mr. *Jacob Bobart* in *Oxfordſhire*, and ſent to the *Phyſic-garden* at *Chelſea*: this differs greatly from the former in its Manner of Flowering; for the Flower-ſtems of this Sort riſe near two Feet high, and the Flowers grow upon long Footſtalks; whereas the Stems of the common Sort ſeldom riſe above eight or ten Inches high, and the Flowers cloſely ſurround the Stalks.

The other two Sorts are preſerv'd in Botanic Gardens for Variety; but as they have little Beauty, ſo they are ſeldom propagated in other Gardens: they all of them increaſe greatly by their creeping Roots, and, if placed in a moiſt Soil, will in a ſhort time over-run a large Compaſs of Ground.

PETIVERIA, *Guiney* Henweed, *vulgo*.

The *Characters* are;

It hath a Flower conſiſting of four Leaves, which are placed almoſt in the Form of a Croſs, from whoſe Cup riſes the Pointal, which afterward becomes the Fruit, which is bordered and cut at the Top, reſembling an inverſed Shield containing oblong Seeds.

We know but one *Species* of this Plant; *viz.*

PETIVERIA *ſolani foliis, loculis ſpinoſis. Plum. Nov. Gen.* Petiveria with Nightſhade-leaves, and prickly Seed-veſſels, commonly call'd *Guiney* Henweed.

This Name was given to this Plant, by Father *Plumier*, who diſcover'd it in *America*; in Honour to Mr. *James Petiver* an Apothecary, who was a curious Botaniſt.

It is a very common Plant in *Jamaica*, *Barbados*, and moſt of the other Iſlands in the *Weſt-Indies*, where it grows in ſhady Woods, and all the *Savannas*, in ſuch Plenty, as to become a very troubleſome Weed; and as this Plant will endure a great deal of Drought, ſo it remains green, when other Plants are burnt up, which occaſions the Cattle to brouze on it; and having a moſt unſavoury ſtrong Scent, ſomewhat like wild Garlick, it gives the Cows Milk the ſame Flavour; and the Cattle which are kill'd ſoon after feeding on this Plant, have a moſt intolerable Scent, ſo that their Fleſh is good for little.

In *Europe* this Plant is preſerv'd in the Gardens of thoſe Perſons who are curious in Botany: but there is little Beauty in it; and having ſo ſtrong rank a Scent upon being handled, renders it leſs valuable. It is propagated by Seeds, which muſt be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be each tranſplanted into a ſeparate Pot, and plunged into a moderate Hot-bed to bring them forward. When the Plants have obtain'd a good Share of Strength, they ſhould be inured to bear the open Air by degrees; into which they may be remov'd toward the Latter-end of *June*, placing them in a warm Situation, where they may remain till Autumn, when they ſhould be remov'd into the Stove, and in Winter muſt have a moderate Degree of Warmth, otherwiſe they will not live in this Country.

Theſe Plants will grow woody, and ſhoot out many Side-branches, but ſeldom riſe above two Feet high. They will produce Flowers and Seeds every Summer, and will continue ſeveral Years, remaining conſtantly green throughout the Year.

PETROSELINUM. *Vide* Apium.

PEUCEDANUM, Hogs-fenel.

The *Characters* are;

It is a Plant with a Roſe and umbellated Flower, conſiſting of many Petals placed orbicularly, and reſting on the Empalement, which becomes a Fruit compoſed of two Seeds, which are almoſt plain, oval, gently ſtreaked, and border'd: to theſe Marks muſt be added, That the Leaves are winged, narrow, graſſy, and divided into three Segments.

The *Species* are;

1. PEUCEDANUM *majus Italicum. C. B. P.* Greater Hogs-fenel.

2. PEUCEDANUM *minus Germanicum. J. B.* Leſſer *German* Hogs-fenel, or Sulphurwort.

There are ſeveral other *Species* of this Plant, which are preſerv'd in ſome curious Botanic Gardens; but as they are Plants of little Beauty or Uſe, it would be needleſs to enumerate their ſeveral Varieties in this Place.

The firſt Sort here mention'd is not very common in *England*, being only to be found in ſome curious Gardens: but the ſecond Sort (which is directed to be uſed in Medicine) is found wild in watry Places, in ſeveral Parts of *England*.

Theſe Plants may be cultivated by ſowing their Seeds on a moiſt Soil in the Autumn, ſoon after they are ripe, in which Place the Plants will come up ſtrong the ſucceeding Spring, when they ſhould be carefully weeded, and drawn out, where they are too cloſe, otherwiſe they will draw each other up very weak; and the Autumn following they may be taken up, and tranſplanted where they are to remain, in which Place they ſhould be planted at leaſt two Feet aſunder; for their Roots will grow very large, and branch out greatly when they have acquired Strength. The ſecond Year after ſowing, they will produce Flowers and Seeds; but the Roots will abide many Years.

PHACA, Baſtard Milk-vetch, or Aſtragaloides.

The *Characters* are;

The Empalement of the Flower is tubulous, and cut into five Parts at the Brim: the Flower is of the papilionaceous Kind, conſiſting of an oval Standard, two ſhort Wings, and an obtuſe ſhort Keel: the Pointal afterward becomes a ſwelling Pod, with the upper Suture depreſs'd, having one Cell containing many kidney-ſhaped Seeds.

The *Species* are;

1. PHACA *leguminibus rectis. Flor. Leyd.* Baſtard Milk-vetch with ſtrait Pods.

2. PHACA *leguminibus arcuatis. Flor. Leyd.* Baſtard Milk-vetch, with arched Pods.

This Plant being near-of-kin to the Aſtragalus, or Milk-vetch, Dr. *Tournefort* gave it the Title of *Aſtragaloides*; but Dr. *Linnæus* has alter'd it to this of *Phaca*; rejecting the other on account of its being a compound Name.

Theſe Plants are Natives of *Portugal* and *Spain*, from whence the Seeds have been procured by ſome Perſons who are curious in collecting rare Plants: the firſt Sort has been long preſerv'd in ſome curious Gardens in *England*; but the other is more rare at preſent.

The Roots of theſe Plants will abide many Years, and run very deep into the Ground; but the Branches decay every Autumn, and the Roots produce freſh every Spring, which will riſe near four Feet high, and grow ligneous. The Flowers are produced in ſhort Spikes from the Wings of the Leaves: but, unleſs the Seaſon proves very warm, they rarely flower in *England*; for which Reaſon the Plants are not much eſteem'd: for it is not once in ſeven Years, that the Flowers arrive to Perfection, nor do the Plants ever produce Seeds in *England*: ſo that the Seeds muſt be procur'd from abroad, by thoſe who are deſirous to have the Plants.

The Seeds ſhould be ſown in the Place where the Plants are to remain; for as they ſhoot their Roots very deep into the Earth, ſo it is very difficult to tranſplant them with any Safety, eſpecially after they have remain'd any conſiderable time in the Seed-bed. The Plants ſhould be left about ſix Feet aſunder, that there may be room to dig the Ground between them every Spring, which is all the Culture they require.

PHALANGIUM, Spiderwort.

The *Characters* are;

It is a Plant with a Lily-flower, compoſed of ſix Petals, from whoſe Centre riſes the Pointal, which afterward becomes a roundiſh Fruit, divided into three Cells, and full of angular Seeds: to theſe Marks muſt be added, A fibroſe Root, in order to diſtinguiſh it from the Ornithogalum.

The *Species* are;

1. PHALANGIUM *parvo flore, ramoſum*. *C. B. P.* Branch'd Spiderwort, with a ſmall Flower.

2. PHALANGIUM *parvo flore, non ramoſum*. *C. B. P.* Unbranch'd Spiderwort, with a ſmall Flower.

3. PHALANGIUM *Africanum, floribus luteis parvis*. *Raii Hiſt.* *African* Spiderwort, with ſmall yellow Flowers.

4. PHALANGIUM *acaulon, foliis ſubulatis, floribus in thyrſo luteis*. Low *African* Spiderwort, with flat Onion-leaves, and yellow Flowers diſpos'd in a looſe Spike.

5. PHALANGIUM *Africanum, foliis cepaceis, floribus ſpicatis aureis*. *Boerh. Ind.* *African* Spiderwort, with Onion-leaves, and golden Flowers growing in Spikes, falſly call'd an Aloe.

6. PHALANGIUM *Æthiopicum ramoſum, floribus albis, petalis reflexis*. *Hort. Amſt.* Branchy *Ethiopian* Spiderwort, with white Flowers, whoſe Petals are turn'd backward.

The firſt and ſecond Sorts are abiding Plants, which are propagated in curious Gardens, for the ſake of their Flowers; and though they are not very beautiful, yet, for their long Continuance in Flower, they deſerve a Place in the open Borders of every curious Flower-garden.

Theſe may be propagated either from Seeds, or by parting their Roots. The beſt time to ſow the Seeds is in Autumn, ſoon after they are ripe, in the manner directed for bulbous-rooted Flowers, with which theſe Plants agree in their Culture, and the ſecond Year after ſowing will produce Flowers. The Seaſon for parting their Roots is in

September; in doing which, you muſt obſerve to preſerve a good Head to each Off-ſet, and not to divide them too ſmall, which will cauſe them to flower weak the following Summer: they delight in a freſh light Earth, and an open Situation.

The third Sort is an annual Plant, which ſhould be ſown on a Bed of light Earth, in *March*; and when the Plants are come up, they muſt be tranſplanted where they are to remain; in which Place they muſt be kept clear from Weeds, which is all the Culture they require: they produce their Flowers in *July*, and their Seeds are perfected in *Auguſt*.

The fourth and fifth Sorts are preſerv'd in Green-houſes, with other ſucculent Plants, amongſt which they make a pretty Variety, there being ſcarcely a Month in the Year when there are not ſome of the Spikes of Flowers of the fifth Sort in Beauty. This was formerly call'd an Aloe, which Name is ſtill retain'd by unſkilful Perſons, though it is vaſtly different therefrom in its whole Appearance. This Plant multiplies very faſt by Off-ſets, which, tho' produc'd at ſome Diſtance from the Earth, yet emit Roots of a conſiderable Length; and, when planted, immediately faſten in the Earth: they ſhould be planted in Pots of light ſandy Earth, and houſed in Winter, with Ficoides's, and other hardy ſucculent Plants, where they may have free open Air; for they are hardy, and require only to be protected from Froſt. The fourth Sort grows very low, the Leaves reſting upon the Surface of the Ground: this flowers in *April* and *May*, and perfects its Seeds every Year; whereby it may be propagated in plenty.

The ſixth Sort is alſo preſerv'd in ſome curious Gardens, with other Exotic Plants, in the Green-houſe: this is multiplied by parting the Roots: the beſt Seaſon for doing this is in *Auguſt*, when moſt of the Leaves are decay'd: they ſhould be planted in Pots fill'd with light ſandy Earth, and houſed in Winter with the laſt: this produces large-branching Stems, which are thinly beſet with Flowers, that have their Petals reflex'd, and are of a whitiſh Colour; but continue a long time in Beauty.

PHASEOLOIDES. *Vide* Glycine.

PHASEOLUS, Kidney-bean.

The *Characters* are;

It is a Plant with a papilionaceous Flower, out of whoſe Empalement riſes the Pointal, which afterward becomes a long Pod, pregnant with Seeds, for the moſt part ſhaped like a Kidney, or oval: to theſe Notes are to be added, Leaves growing by Threes on each Pedicle, and the Plant for the moſt part climbing.

It would be to little Purpoſe to enumerate all the Varieties of this Plant which have come to Knowlege, in this Place; ſince *America* annually furniſhes us with new Sorts, ſo that there is no knowing what Varieties there may be produc'd in *England*: beſides, as they are not likely to be much cultivated here, ſince the old Sorts are preferable to any of the new ones, for the Kitchen; therefore I ſhall only firſt ſet down a few Sorts which are cultivated for their Flowers, or as Curioſities, and then mention thoſe which are moſt eſteem'd for the Table.

1. PHASEOLUS *Indicus, flore coccineo, ſeu puniceo. Mor. Hiſt.* The Scarlet Bean.

2. PHASEOLUS *Americanus perennis, flore cochleato odorato, ſeminibus fuſcis orbiculatis, Caracalla dictus. H. L.* Perennial *American* Kidney-bean, with ſweet-ſmelling cochleated

Flowers, commonly call'd Caracalla.

3. Phaseolus *Americanus, ſtrumoſa radice, flore purpureo, ſiliqua anguſtiſſima. Plum.* *American* Kidney-bean, with a ſtrumoſe Root, a purple Flower, and a very narrow Pod.

4. Phaseolus *Canadenſis purpureus minor, radice vivaci. Schol. Bot.* Small purple Kidney-bean, with a perennial Root.

The firſt of theſe Plants is very common in the *Engliſh* Gardens, being planted for the Beauty of its ſcarlet Flowers: this Plant ſpreads itſelf very far, ſo that it ſhould be allow'd room, otherwiſe it will over-run whatever Plants grow near it. The Seaſon for planting the Seeds of this Plant is in the Beginning of *May*, obſerving always to do it in dry Weather, otherwiſe the Seeds will burſt and rot: they will produce their Flowers by the Beginning of *July*, and will continue flowering until the Froſt prevents them; and their Seeds will ripen in *September*, when they ſhould be gathered, and preſerved in a dry Place until the ſucceeding Spring, in order to be ſown. This Plant, being annual, periſhes with the firſt Approach of Winter: it will thrive very well in the City, the Smoke of the Sea-coal being leſs injurious to this Plant than moſt others; ſo that it is often cultivated in Balconies, *&c.* and, being ſupported either with Sticks or Strings, grows up to a good Height, and produces Flowers as it advances: it is alſo planted in ſome Gardens, to cover Arbours, and other Seats, in the Summer-ſeaſon, to afford Shade; for which Purpoſe it will do very well: but the Seeds muſt be planted where they are to remain; for the Plants don't bear to be tranſplanted; eſpecially after they have been any time out of the Ground.

The ſecond Sort is an abiding Plant, which may alſo be propagated by Seeds, which ſhould be ſown in a moderate Hot-bed in the Spring; and when the Plants come up, they muſt be carefully tranſplanted into Pots fill'd with freſh light Earth, and muſt be plunged into an Hot-bed, to facilitate their taking Root; after which, they ſhould be inured to bear the open Air by degrees, into which they ſhould be remov'd when the Seaſon is warm, placing them in a ſhelter'd Situation; and as they advance, they ſhould be remov'd into larger Pots, which muſt be fill'd up with freſh light Earth.

During the Summer-ſeaſon the Plants muſt be frequently refreſh'd with Water; but in Winter they muſt be remov'd into the Green-houſe, and ſhould have but little Water during that Seaſon. Theſe require only to be ſcreen'd from Froſt; but muſt have open free Air whenever the Weather will permit, otherwiſe the Leaves will grow mouldy, and decay the tender Shoots: theſe Plants produce their ſcarlet Flowers in *July* and *Auguſt*, but ſeldom perfect their Seeds in this Country. This Plant is very common in *Portugal*, where it is planted to cover Arbours and Seats in Gardens, for which it is greatly eſteem'd by the Inhabitants of that Country, as alſo for its beautiful ſweet-ſmelling Flowers; and in that Country it thrives very well in the open Air.

The third Sort is preſerv'd in ſome curious Gardens for Variety; but is a Plant of no great Beauty: this may be propagated by ſowing the Seeds in the Spring upon an Hot-bed; and when they come up, they muſt be planted in Pots, and treated as the former Sort: it produces its Flowers in *July*, and the Seeds ripen in *September*.

The fourth Sort was brought from *America*, and is preſerv'd in curious Gardens, for the ſake of its long Flowering: this is an abiding Plant, and ſhould be managed as was directed for the third Sort; and if guarded from Froſt, will continue to produce Flowers all the Winter-ſeaſon: it ripens Seeds very well, from which the Plants may be eaſily propagated.

There are at preſent but few Sorts of Kidney-beans, which are cultivated for the Table in *England*: theſe are,

1. The Common White or *Dutch* Kidney-bean.

2. The Leſſer Garden Kidney-bean, commonly call'd, The *Batterſea* Bean.

3. The Upright or Tree Kidney-bean.

4. The Dwarf White Kidney-bean. This Sort is generally us'd for Hot-beds.

5. The *Canterbury* Kidney-bean.

6. The Spotted Tree Kidney-bean.

The firſt of theſe was formerly more cultivated in *England* than at preſent; but is the chief Sort now cultivated in *Holland*, from whence, probably, it had the Name of *Dutch* Kidney-bean: this Sort riſes to a very great Height, and requires to be ſupported by tall Stakes, otherwiſe they will ſpread upon the Ground, and rot; ſo that where this Care is wanting, the Fruit ſeldom comes to good: which Trouble renders it difficult to cultivate this Sort in Plenty; and the Beans being much broader than the ſmall Sort, render them leſs valuable in the *London* Markets; which, I ſuppoſe, occaſion'd their being neglected in *England*: but this is by far the beſt Sort for Eating yet known.

The ſecond and fourth Sorts are moſt commonly cultivated in the Gardens near *London*, and the beſt Sorts we yet know to ſupply the Markets: for the Plants never ramble too far, but are always of moderate Growth, ſo that the Air can eaſily paſs between the Rows, and keep them from rotting: they are alſo plentiful Bearers, and the beſt Beans, except the firſt, for Eating.

The third Sort is alſo a plentiful Bearer, and never rambles, growing upright in form of a Shrub: but the Beans are much larger than the laſt, and are not ſo well colour'd, nor do they eat near ſo firm and criſp; for which Reaſons they are not ſo generally eſteem'd.

The fifth Sort hath been eſteem'd by ſome Perſons, for its continuing long in Bearing; but the firſt is much preferable to it on that Account.

The ſixth Sort is a plentiful Bearer, and ſtands upright, for which it is much eſteem'd by ſome Gardeners; but is a very bad-taſted Bean, being extremely rank, and rarely boils green.

Theſe Sorts are propagated from Seeds, which muſt be ſown in the Place where they are to remain; for they will not bear tranſplanting, except it be done while they are very young; and this, being pretty troubleſome, is very ſeldom practiſed, unleſs for a few early Plants under warm Hedges or Walls; but it is not worth while for the general Crops.

The Seaſon for putting theſe Seeds in the Ground is the Middle of *April*, for an early Crop: but theſe ſhould have a warm Situation, and a dry Soil, otherwiſe they will not ſucceed: you ſhould alſo obſerve to put them into the Ground at a dry Seaſon; for Wet ſo early in the Seaſon will rot the Seeds in the Ground. The Manner of planting them is, to draw ſhallow Furrows with an Hoe, at about two Feet and an half Diſtance from each other, into which you ſhould drop the Seeds about two Inches aſunder; then with the Head of a Rake draw the Earth over them, ſo as to cover them about an Inch deep.

If the Seaſon be favourable, the Plants will begin to appear in about a Week's time after ſowing, and ſoon after will raiſe their Heads upright; therefore, when the Stems are advanced pretty tall above-ground, you ſhould gently draw a little Earth up to them, obſerving to do it when the Ground is dry, which will preſerve them from being injur'd by ſharp Winds: but you ſhould be careful not to draw any of the Earth over their Leaves, which would rot them, or at leaſt greatly retard their Growth. After this, they will require no farther Care but to keep them clear from Weeds, until they produce Fruit, when they ſhould be carefully gather'd two or three times a Week; for if they are permitted to remain upon the Plants a little too long, the Beans will be too large for eating, and the Plants would be greatly weaken'd thereby.

The *Dutch* Kidney-bean muſt be planted at a greater Diſtance, Row from Row; for as theſe grow very tall, ſo if the Rows are not at a farther Diſtance, the Sun and Air will be excluded from the middle Rows; therefore theſe ſhould not be leſs than four Feet Diſtance Row from Row: and when the Plants are about four Inches high, the Poles ſhould be thruſt into the Ground by the Side of the Plants, to which they will faſten themſelves, and climb to the Height of eight or ten Feet, and bear Plenty of Fruit from the Ground upward. This Sort will continue good much longer than either of the other; for the Pods of this Sort are never ſtringy, nor are the Beans mealy when old. The *Dutch* and *French* preſerve great Quantities of the dry Beans for Winter-uſe, which they ſtew, and make good with Gravy, and other Sawces.

If two Crops of this Sort of Bean are ſown at a proper Diſtance, it will be ſufficient to continue a Succeſſion during the Seaſon of Kidney-beans, eſpecially if a few of an early Kind are ſown, to come before them: for this large Sort ſhould not be ſown earlier than the Latter-end of *April*, or the Beginning of *May*, according as the Seaſon may prove.

The firſt Crop of *Batterſea* Kidney-beans will continue a Month in good Order, during which time they will produce great Plenty of Beans; therefore, in order to have a Succeſſion of them throughout the Seaſon, you ſhould ſow at three different times; *viz.* in *April*, in *May*, and toward the Latter-end of *June*; which laſt Crop will continue until the Froſt comes on, and deſtroys them.

There are ſome Perſons who raiſe theſe in Hot-beds, in order to have them early. The only Care to be taken in the Management of theſe Plants, when thus rais'd, is to allow them room, and give them as much Air as can be conveniently, when the Weather is mild; as alſo to let them have but a moderate Heat; for if the Bed be over-hot, they will either burn, or be drawn up ſo weak as never to come to good.

The Manner of making the Hot-bed being the ſame as for Cucumbers, &c. need not be repeated in this Place: but only obſerve, when the Dung is equally levell'd, to lay the Earth about four or five Inches thick; and let the great Steam of the Bed paſs off before you ſow the Seeds.

The time for doing this muſt be proportion'd to the Seaſon when you would have the Beans for the Table; but the ſureſt time for a Crop is about a Week in *February*.

It is alſo a good Method which ſome uſe, to have *French* Beans earlier than they can be obtain'd in the common Ground, to make a gentle Hot-bed about the middle of *March*, which may be arch'd over with Hoops, and cover'd with Mats; in this they ſow their Kidney-beans in Rows pretty cloſe together, ſo that a ſmall Ped will contain a great Number of Plants: theſe they bring up hardily, inuring them to the open Air by degrees; and in the Middle of *April*, when the Weather is ſettled, they prepare ſome warm Borders under Walls or Hedges; then they take them up from the Hot-bed, preſerving as much Earth as poſſible to their Roots, and plant them in the Borders at the Diſtance they are to remain: theſe, if they take Root kindly, will produce Beans at leaſt a Fortnight or three Weeks before thoſe ſown in the common Ground.

The Manner of ſaving the Seeds of theſe Plants is to let a few Rows of them remain ungather'd in the Height of the Seaſon; for if you gather from the Plants for ſome time, and afterwards leave the remaining for Seed, their Pods will not be near ſo long and handſome, nor will the Seed be ſo good. In the Autumn, when you find they are ripe, you ſhould in a dry Seaſon pull up the Plants, and ſpread them abroad to dry; after which, you may threſh out the Seed, and preſerve it in a dry Place for Uſe.

PHILLYREA, Mock-privet.

The *Characters* are;

The Leaves grow by Pairs oppoſite to each other, and are ever-green: the Flower conſiſts of one Leaf, is bell-ſhaped, and divided into four Parts at the Top: the Pointal, which riſes from the Centre of the Flower-cup, afterward becomes a ſpherical Fruit containing one round Seed.

The *Species* are;

1. PHILLYREA *latifolia lævis*, *C. B. P.* The broad-leav'd true Phillyrea.

2. PHILLYREA *latifolia ſpinoſa*. *C. B. P.* Ilex-leav'd Phillyrea, *vulgo*.

3. PHILLYREA *folio alaterni. J. B.* Phillyrea with an Alaternus-leaf.

4. PHILLYREA *folio liguſtri. C. B. P.* Privet-leav'd Phillyrea.

5. PHILLYREA *anguſtifolia prima*, *C. B. P.* Narrow-leav'd Phillyrea.

6. PHILLYREA *anguſtifolia ſecunda. C. B. P.* Roſmary-leaf'd Phillyrea, *vulgo*.

7. PHILLYREA *oleæ Epheſiacæ folio. Hort. Chelſ. Pluk. Phyt.* Olive-leav'd Phillyrea.

8. PHILLYREA *latifolia lævis, foliis ex luteo variegatis. Cat. Plant. Hort.* The true Phillyrea, with ſtrip'd Leaves.

9. PHILLYREA *longiore folio profunde crenato. H. R. Par.* Phillyrea with a longer Leaf, which is deeply crenated.

10. PHILLYREA *folio buxi. H. R. Par.* Box-leav'd Phillyrea.

11. PHILLYREA *Hiſpanica, lauri folio ſerrato & aculeato. Inſt. R. H. Spaniſh* Phillyrea, with a prickly and ſaw'd Bay-leaf.

12. PHILLYREA *Hiſpanica, nerii folio. Inſt. R. H. Spaniſh* Phillyrea, with an Oleander-leaf.

13. Phillyrea *Capenſis, folio celaſtri. Hort. Elth.* Phillyrea of the *Cape of Good Hope*, with a Staff-tree-leaf, commonly call'd by the *Dutch, Lipplebout.*

14. Phillyrea *Americana humilis, radice craſſa lutea, foliis acuminatis. Plum. Cat.* Dwarf *American* Phillyrea, with a thick yellow Root, and pointed Leaves.

15. Phillyrea *Americana humilis, radice craſſa roſea, foliis rotundioribus. Plum. Cat.* Dwarf *American* Phillyrea, with a thick, roſe-colour'd Root, and rounder Leaves.

The twelve firſt-mention'd Sorts are all of them Natives of the Southern Parts of *France, Spain* and *Italy*; but are hardy enough to endure the Cold of our Climate in the open Air: they have been formerly in great Requeſt for Hedges, and to cover Walls: for both which Purpoſes they are very improper; becauſe they ſhoot ſo faſt in the Spring and Summer Months, that is very troubleſome to keep ſuch Hedges in Order: beſides, all theſe Sorts with broad Leaves naturally produce their Branches ſo far aſunder, that they can never be reduc'd to a thick handſome Hedge; for although by frequently clipping the extreme Parts of the Shoots you force out ſome Side-branches, which render it thick on the Outſide, yet the inner Branches are very far aſunder, and, being of a pliable Nature, are often diſplac'd by ſtrong Winds; or if there happen to fall much Snow in Winter, ſo as to lie upon theſe Hedges, it often diſplaces them ſo much as not to be recover'd again in ſome Years; for which Reaſons they are not ſo much in Uſe for Hedges as they were ſome Years paſt; nor are they ſo often planted to cover Walls; for it is a very difficult Taſk to keep them cloſe to the Wall; for their Branches, being vigorous, commonly grow to ſome Diſtance from the Wall, and harbour all Sorts of Inſects and Filth: beſides, their Leaves being large, and growing pretty far aſunder upon the Branches, they appear naked, eſpecially when they are cloſely clipt.

But all theſe Sorts of Trees are very proper to intermix with other Ever-greens, to form Clumps, Amphitheatres, or to plant round the Sides of Wilderneſſes of ever-green Trees, where, being placed among other Trees of the ſame Growth, they will afford a pleaſing Variety.

The three firſt Sorts will grow to the Height of twenty Feet, or more, and may be train'd up to regular Heads: but the narrow-leav'd Sorts ſeldom riſe above fourteen or ſixteen Feet high with us; ſo that they will be of a proper Size to place in a Line before the broad-leav'd Sorts, where being intermix'd with Hollies, Alaternus's, Arbutus's, and ſome other Sorts, they will make a beautiful Proſpect.

The olive-leav'd Sort will alſo grow to the Height of twelve or fourteen Feet, and the Branches are well furniſh'd with Leaves; ſo that it makes an exceeding good Figure, when intermix'd with other ever-green Trees: for the Leaves of this Sort are of a beautiful ſhining Green, and the Shoots grow erect; and, being ſtrong, are not ſo liable to be diſplac'd as thoſe of ſome of the other Kinds. The Sort with prickly Leaves grows much in the ſame manner; ſo that theſe are to be preferr'd to all the other Kinds on this Account.

The box-leav'd Sort is very ſcarce in *England.* This is of humbler Growth than either of the former, ſeldom riſing above ſeven or eight

Feet high: the Branches of this Sort grow pretty cloſe, and the Leaves are very ſmall.

As all theſe Sorts are very hardy, ſo they are the more valuable, being rarely injured by the Froſt: whereas the Alaternus is frequently damag'd by ſevere Cold, and many times the Branches are kill'd to the Stem, when the Phillyrea's remain in Verdure: and by confounding the two Sorts together, as is commonly done by the Gardeners, they have both been brought into Diſrepute unjuſtly: for I think all the Sorts of Phillyrea may be ſo placed in Plantations of ever-green Trees, as to be rendered very ornamental: therefore all the Sorts deſerve propagateing much better than many other which are more cultivated.

Theſe Plants are propagated either from Seeds or Layers; but the latter, being the moſt expeditious Method in *England*, is chiefly preferr'd. The beſt time to lay them down is in Autumn, when you ſhould dig the Ground round the Plants intended to lay, making it very looſe; then making choice of a ſmooth Part of the Shoot, you ſhould make a Slit upward (in the manner which is practis'd in laying of Carnations); and then bend the Branch gently down to the Ground, making an hollow Place with your Hand to receive it; and having plac'd the Part which was ſlit in the Ground, ſo as that the Slit may be open, you ſhould faſten it down with a forked Stick, that it may remain ſteady, covering that Part of the Branch with Earth about three Inches thick, obſerving to keep the upper Part erect. In dry Weather theſe Layers ſhould be water'd, which will greatly facilitate their Rooting; you muſt alſo keep them clear from Weeds, which, if ſuffer'd to grow up amongſt them, will prevent their taking Root.

The Autumn following, many of theſe Plants will be rooted; at which time they may be taken off, and carefully planted in a Nurſery, where they may be train'd up three or four Years in the manner you intend them to grow; during which time you ſhould dig the Ground between the Rows, and cut about the Roots of the Plants every Year; which will cauſe them to ſtrike out ſtrong Fibres, ſo as to ſupport a good Ball of Earth when they are remov'd: you ſhould alſo ſupport their Stems with Stakes, in order to make them ſtrait, otherwiſe they are very apt to grow crooked and unſightly.

When the Plants have been thus manag'd three or four Years, you may tranſplant them into the Places where they are deſign'd to remain. The beſt time for this Work is the Latter-end of *September*, or the Beginning of *October*: but in removing them, you ſhould dig round their Roots, and cut off all downright or ſtrong Roots, which have ſhot out to a great Diſtance, that you may the better preſerve a Ball of Earth to each Plant, otherwiſe they are ſubject to miſcarry: and when you have plac'd them in their new Quarters, you ſhould lay ſome Mulch upon the Surface of the Ground, to prevent its drying; and give them ſome Water twice a Week in very dry Weather, but not too often; and this only when the Seaſon is favourable; nor in too great Quantities, which will rot the new Fibres, and prevent their Growth. You ſhould alſo ſupport the Plants with Stakes until they have taken faſt Hold of the Earth, to prevent their being turn'd out of the Ground, or diſplac'd by the Winds, which will deſtroy the Fibres that were newly put out, and greatly injure the Plants. Theſe Trees delight in a middling Soil, which is neither too wet and ſtiff, nor too dry; tho' the latter is to be preferr'd to the former, provided it be freſh.

The Sort with ſtrip'd Leaves is at preſent pretty rare, and ſomewhat tenderer than the others, as are moſt Sorts of variegated Plants leſs capable to endure the Cold, than thoſe of the ſame Kinds which are plain; the Striping of Plants always proceeding from their Weakneſs. This is preſerv'd in ſome Gardens as a Curioſity; but may be propagated in the ſame manner with the former.

Thoſe Sorts with ſmall Leaves are commonly two Years before they take Root, when laid: therefore they ſhould not be diſturb'd; for the raiſing them out of the Ground greatly retards their Rooting.

The thirteenth Sort is very common in ſeveral Gardens in *Holland*; but at preſent pretty rare in *England*. This Sort will not live abroad thro' the Winter in this Climate; therefore it is always preſerv'd in Pots or Tubs, and remov'd into the Green-houſe in Winter, where if it is treated after the manner directed for the *Clutia*, it will thrive very well. This Sort is alſo propagated by laying down the tender Branches in the Spring of the Year, which muſt be duly water'd in dry Weather; and by the following Spring they will have taken Root; when they ſhould be ſeparated from the old Plant, and planted in Pots fill'd with freſh Earth, and plac'd in the Shade until they have taken new Root; after which time they may be expos'd, during the Summer-ſeaſon, with other pretty hardy Exotic Plants, in a ſhelter'd Situation, where they may remain until Autumn, when they muſt be remov'd into the Green-houſe. Theſe Plants are ever-green, ſo that they make a pretty Variety in the Green-houſe, during the Winter-ſeaſon.

The fourteenth Sort grows plentifully in ſeveral Parts of the *Spaniſh Weſt-Indies*. The Seeds of this Kind were ſent to *England* by Mr. *Robert Millar*, who gathered them near *Carthagena* in *America*. The fifteenth Sort was diſcover'd by Father *Plumier* in *America*, and ſince by Mr. *Millar* in the Iſland of *Tobago*, from whence he ſent ſome Seeds; but they did not ſucceed in *England*.

Theſe two Sorts are tender Plants, which muſt be kept in a warm Stove in Winter, otherwiſe they will not live in this Country.

They may be propagated by Seeds, which ſhould be obtain'd as freſh as poſſible from the Countries of their Growth, and muſt be ſown in Pots of freſh light Earth, and plunged into an Hot-bed of Tanners Bark; where they ſhould remain until the Plants come up, which is many times a Year from the time of ſowing: therefore whenever the Seeds remain ſo long in the Ground, the Pots muſt be frequently water'd in Summer, and in Winter the Glaſſes of the Hot-bed ſhould be cover'd with Mats, when the Weather is cold, to prevent the Froſt from entering the Bed, which would deſtroy the Seeds.

When the Plants are come up, they ſhould be each tranſplanted into a ſmall Pot fill'd with freſh Earth, and then plunged into the Hot-bed again, obſerving to ſhade them from the Sun in the Heat of the Day, until they have taken new Root; after which time they muſt have free Air admitted to them every

Day, in proportion to the Warmth of the Seaſon. In this Bed the Plants may remain till Autumn, when they ſhould be remov'd into the Stove, and plung'd into the Bark-bed, where, during the Winter-ſeaſon, they ſhould be kept pretty warm. Theſe Plants may remain in the Bark-ſtove for two Years or leſs, according as they acquire Strength; for when they are pretty ſtrong, they may be treated leſs tenderly, expoſing them in the Middle of the Summer to the open Air, in a ſhelter'd Situation: and in Winter they may be plac'd in a dry Stove, where they ſhould have a moderate Degree of Warmth, in which they will thrive very well. Theſe Plants retain their Verdure throughout the Year, for which they are chiefly eſteem'd.

PHLOMIS, The Sage-tree, or *Jeruſalem* Sage.

The *Characters* are;

It hath a labiated Flower conſiſting of one Leaf, whoſe upper Lip, or Helmet, which is creſted, does wholly reſt upon the under Lip, or Beard, which is divided into three Parts, and extends a little beyond the upper Lip: the Pointal riſes out of the Flower-cup accompany'd with four Embryoes, which afterward become ſo many oblong Seeds, ſhut up in an Huſk, or pentagonal Tube, which was before the Flower-cup.

The *Species* are;

1. PHLOMIS *fruticoſa, ſalviæ folio latiore & rotundiore. Tourn.* Broad-leav'd Sage-tree, *vulgo*.

2. PHLOMIS *fruticoſa, ſalviæ folio longiore & anguſtiore. Tourn.* Narrow-leav'd Sage-tree, *vulgo*.

3. PHLOMIS *fruticoſa humilis latifolia candidiſſima, floribus luteis. Act. Phil.* Low ſhrubby Sage-tree, with broad hoary Leaves, and yellow Flowers.

4. PHLOMIS *Narbonenſis, hormini folio, flore purpuraſcente. Tourn. Narbonne Jeruſalem* Sage, with a Clary-leaf, and purpliſh Flower.

5. PHLOMIS *Hiſpanica candidiſſima herbacea. Tourn. Spaniſh Jeruſalem* Sage, with very hoary Leaves.

6. PHLOMIS *lychnitis. Cluſ. Hiſt.* Narrow-leav'd *Jeruſalem* Sage.

7. PHLOMIS *Samia herbacea, lunariæ folio. T. Cor.* Herbaceous *Samian Jeruſalem* Sage, with a Moon-wort-leaf.

8. PHLOMIS *Orientalis, foliis laciniatis. T. Cor. Eaſtern Jeruſalem* Sage, with jagged Leaves.

9. PHLOMIS *Orientalis lutea herbacea latifolia verticillata. Act. Phil.* Broad-leav'd herbaceous *Jeruſalem* Sage from the *Levant*, with yellow Flowers growing in Whorles.

10. PHLOMIS *fruticoſa, flore purpureo, foliis rotundioribus. Inſt. R. H.* Shrubby *Jeruſalem* Sage, with a purple Flower, and rounder Leaves.

11. PHLOMIS *fruticoſa Luſitanica, flore purpuraſcente, foliis acutioribus. Inſt. R. H.* Shrubby *Jeruſalem* Sage of *Portugal*, with a purpliſh Flower, and ſharp-pointed Leaves.

12. PHLOMIS *Hiſpanica fruticoſa candidiſſima, flore ferrugineo. Inſt. R. H.* The whiteſt *Spaniſh* Shrub *Jeruſalem* Sage, with an iron-colour'd Flower.

13. PHLOMIS *Orientalis lutea anguſtifolia, cymis fulveſcentibus, D. Sherard. Act. Phil. N.* 376. Yellow *Eaſtern Jeruſalem* Sage, with a narrow Leaf, and yellow Tops.

The three firſt-mention'd Sorts grow to be Shrubs of a middling Size, and are proper to intermix with other Sorts of Plants, which are of the ſame Growth, in ſmall Wilderneſs-quarters, where, by the Diverſity of their hoary Leaves, their large Spikes of yellow Flowers, and their long Continuance in Flower, they make an agreeable Variety.

Theſe Plants have been preſerv'd in Pots, and placed in the Green-houſe in Winter among other tender Exotics: but they are hardy enough to endure the Cold of our ordinary Winters in the open Air, provided they are planted in a dry Soil, and have a warm Situation; and are rarely injured by Cold, unleſs in a very ſevere Froſt.

They are propagated by Cuttings in this Country; for their Seeds ſeldom ripen well in *England*, except in very warm dry Seaſons. The beſt time to plant theſe Cuttings is in *May*, that they may have good Roots before Winter. They ſhould be planted in a Bed of freſh light Earth, and ſhaded from the Sun until they have taken Root; after which, they will require no farther Care, but only to keep them clear from Weeds until the following Spring, when they may be remov'd to the Places where they are deſign'd to be continu'd.

The beſt Seaſon for tranſplanting them is in *April*, before they begin to ſhoot, obſerving to preſerve a Ball of Earth to the Root of each Plant, as alſo to water them until they have taken Root: and in order to form them into a regular Shape, they ſhould be ſtak'd, and their Stems kept conſtantly faſten'd thereto, until they arrive at the Height you deſign them: then you may ſuffer their Branches to ſhoot out on every Side, to make an handſome Head; in order to which, you ſhould prune off ſuch Branches as grow irregular on either Side, which muſt always be perform'd in Summer; for if they are wounded in Winter, the Cold often injures the Plants, by entering the Wounds.

The Soil in which they are plac'd ſhould not be dung'd; for that cauſes them to grow too faſt, whereby their Shoots are too replete with Moiſture, and leſs capable to endure the Cold; whereas if they are planted upon a dry, barren, rocky Soil, they are ſeldom injur'd by Cold, which is the Caſe of moſt of the ſame Claſs of Plants with Lip-flowers.

The tenth, eleventh, twelfth, and thirteenth Sorts are ſhrubby Plants, which grow three or four Feet high; and are very proper to intermix with other Shrubs of the ſame Growth. Theſe are ſometimes injur'd by hard Froſts; but will endure the Cold of our ordinary Winters in the open Air, if they are planted in a warm Situation. Theſe may be propagated by Cuttings in the ſame manner as hath been directed for the former Sorts.

The other Sorts, being low herbaceous Plants, are all of them propagated by parting of their Roots, which ſhould be done in the Spring of the Year, obſerving to preſerve a leading Bud to each Off-ſet. Theſe ſhould alſo be plac'd in a dry, rocky, or gravelly Soil, in which they will thrive much better than if planted in a richer Ground, and will endure the Cold of our ordinary Winters extremely well in the open Air.

Theſe Plants laſt-mentioned are of no great Beauty; but are preſerv'd in the Gardens of thoſe who are fond of Variety. A Tea made with the Leaves of theſe Plants is accounted very good for ſore Throats.

PHLOX, Lychnidea or Baſtard Lychnis.

The *Characters* are;

The Empalement conſiſts of one Leaf, is tubulous, and cut at the Brim into five acute Segments: the Flower is of one Leaf, ſhap'd like a Salver, having a long Tube, and is ſpread open

open at the Top, where it is divided into five equal blunt Segments: in the Bottom of the Flower is ſituated the Pointal, attended by five Stamina, *which are ſhort: the Pointal afterward becomes a conical Veſſel; having three Cells, each containing one oval Seed.*

The *Species* are;

1. Phlox *foliis lineari-lanceolatis, caule erecto, corymbo terminatrici. Lin. Hort. Cliff.* Baſtard Lychnis, with narrow ſpear-ſhap'd Leaves, and an upright Stalk terminated with a Corymbus of Flowers.

2. Phlox *foliis craſſis lucidis acutis, caule erecto, floribus quaſi umbellatim diſpoſitis.* Baſtard Lychnis, with thick ſhining pointed Leaves, an upright Stalk, and Flowers diſpos'd in an Umbel.

3. Phlox *foliis lanceolatis obtuſis, floribus majoribus umbellatim diſpoſitis.* Baſtard Lychnis, with blunt ſpear-ſhap'd Leaves, and large Flowers growing in an Umbel.

4. Phlox *foliis lineari-lanceolatis, caule elatior, floribus in longam ſpicam denſe ſtipatis.* Baſtard Lychnis, with narrow ſpear-ſhap'd Leaves, a tall Stalk, and Flowers growing in a long cloſe Spike.

Theſe are all of them *American* Plants: ſome of them were brought from *Virginia*, and others from *Carolina*; but they thrive very well in the open Air in *England*: and as they are beautiful flowering Plants, they merit a Place in every good Garden.

The third Sort is the firſt which flowers in the Spring. This begins flowering in *May*: the Stalks are ſeldom more than a Foot high: the Leaves are much broader than thoſe of the other Sorts: the Flowers are large, and of a ſky-blue Colour.

The next which follows in flowering, is the firſt Sort. This grows a little taller than the former: the Leaves are narrow, and ſharp-pointed: the Flowers are of a pale-purple Colour, and grow in form of an Umbel.

The ſecond Sort ſucceeds this in the time of Flowering. The Stalks of this are ſtronger and taller than either of the former: the Leaves are ſtiff, and of a ſhining-green Colour: the Flowers are of a bright-purple Colour, and are diſpos'd almoſt in form of an Umbel, and continue in Flower much longer than either of the former. This flowers the Latter-end of *June*, and continues moſt Part of *July* in Beauty.

The fourth Sort grows upward of three Feet high, with ſtrong ſpotted Stalks: the Leaves are ſtiff and pointed, growing by Pairs, which croſs each other at the Joints alternately: the Flowers are diſpos'd in a long thick Spike, forming a kind of Pyramid, and are of a bright-purple Colour: this begins to flower toward the End of *July*, and continues thro' *Auguſt*, and a great Part of *September*; eſpecially if it is planted in a moiſt Soil, and not too much expos'd to the Sun; and is one of the moſt ornamental Plants of the Seaſon.

Theſe Plants are uſually propagated by parting of their Roots: the beſt Seaſon for this is in *October*. The firſt and third Sorts increaſe pretty faſt this way; but the ſecond and fourth Sorts do not propagate ſo much by Off-ſets; therefore theſe may be propagated in plenty by Cuttings, which ſhould be taken off, when the Shoots are about four or five Inches high, and planted in a ſhady Border, where, if they are duly water'd, they will make Roots in three Weeks or a Month's time, and moſt of them will flower the ſame Year, a little after the old Roots;

ſo they may be continu'd longer in Flower by this Method: and theſe will be ſtrong Plants fit to plant in the Borders of the Pleaſure-garden in *October*.

All the Sorts may be propagated by Cuttings in the ſame manner as theſe; but as the two other Sorts increaſe pretty faſt by Off-ſets, ſo this Method of propagating thoſe is rarely practis'd, unleſs where the Plants are not in plenty.

It is very rare that either of theſe produce Seeds in *England*; but in their native Country they ſeed pretty well every Year; and from the Seeds moſt of them were obtain'd in *Europe*.

They delight in rich Ground, and ſhould be duly water'd in very dry Weather, otherwiſe their Stalks will be ſhort, the Flowers ſmall, and of ſhort Duration: if ſome of each Sort of theſe Plants are planted in Pots, and conſtantly water'd, they will flower very ſtrong, and make a fine Appearance; ſo will be very proper to adorn Court-yards or Halls, during their Continuance in Flower, where they will be very ornamental.

This Genus of Plants was titled *Lychnidea*, from the Reſemblance which the Flowers have to ſome Species of *Lychnis*; but as this Name is compounded, Dr. *Linnæus* has alter'd the Title to this of *Phlox*, which is a Name of *Theophraſtus*, applied by him to ſome Plant which had great Affinity to the *Lychnis*.

PHYLICA, Alaternoides, or Baſtard Alaternus.

The *Characters* are;

The Flowers are collected together in an Head, and ſit upon a ſort of Diſk, each having an Empalement conſiſting of three narrow Leaves: the Flowers are tubulous, and extend beyond the Empalement, and are cut at the Brim into five Parts, where they are fringed; and the Bottom of the Tube is ſcaly: the Pointal is ſituated at the Bottom of the Tube, attended by five ſhort Stamina, *which are inſerted in the Scales of the Tube: the Pointal afterward changes to a roundiſh Veſſel, having three Cells, each having one Seed.*

The *Species* are;

1. Phylica *foliis ovato-linearibus. Lin. Hort. Cliff.* Baſtard Alaternus, with Heath-leaves.

2. Phylica *foliis lineari-ſubulatis, ſummis hirſutis. Flor. Lyd.* Baſtard Alaternus, with Yew-leaves, which are crown'd with Hairs on their Top.

The firſt Sort is now pretty common in the *Engliſh* Gardens, where it is uſually plac'd in the Green-houſe in Winter; but this will live in the open Air in moderate Winters, if it is planted on a dry Soil, and in a warm Situation: but as ſevere Froſt will deſtroy them, ſome Plants ſhould be preſerv'd in Pots, and ſhelter'd in the Winter to preſerve the Kind: and as theſe Plants continue in Flower from the Beginning of *October*, to the End of *March*, they merit a Place in the Green-houſe among other hardy Exotic Plants, where being intermix'd, they make an agreeable Variety; for the Extremity of each Branch is generally terminated by Bunches of ſmall ſnowy Flowers; and the Shoots being cloſely garniſh'd with ever-green Leaves, ſhap'd ſomewhat like thoſe of Heath, have a very agreeable Appearance during the whole Winter-ſeaſon.

This Sort is apt to produce its Branches irregular, and to ſpread near the Ground, unleſs they are train'd to Stakes while young; but they may, with Care, be train'd up with Stems: but their Shoots ſhould not be ſhorten'd to reduce them to regular Heads; for that will prevent their Flowering, which is the Caſe of moſt of theſe Plants in the *Dutch* Gardens, where they are reduc'd to regular Heads: but the beſt Way is to ſpread the Branches, and form them into a ſort of Fan, whereby their Branches may be extended to their full Length; and they may be train'd ſo cloſe as to form a thick well-ſpread Fan, which will be cover'd with white Flowers from the Ground upward to the Height of three Feet.

The ſecond Sort is now very rare in the *Engliſh* Gardens; but was ſome Years paſt more common: it grows about the ſame Height with the former Sort, and produces its Flowers in Winter: but theſe are not ſo beautiful as thoſe of the other, nor are they of ſo long Duration; but as the Leaves continue green throughout the Year, it may merit a Place in every good Green-houſe.

Theſe Plants were brought from the *Cape of Good Hope*, where they naturally grow, into the curious Gardens in *Holland*, where they are preſerv'd with great Care; but we find them ſo hardy as to live abroad in moderate Winters, and only require to be ſcreen'd from ſevere Froſt; ſo they may be plac'd, in the Winter, in a common Green-houſe, together with Myrtles, Oleanders, and ſuch other hardy Exotic Plants, as require no artifical Warmth, but only Protection from ſevere Froſt.

They may both be propagated by Cuttings, which ſhould be planted about the Middle or Latter-end of *Auguſt*, which is the time theſe Plants are preparing to ſhoot; for they keep their natural Seaſon of Flowering and Growth, altho' they are remov'd to a Country differing in Seaſons from that of their original Growth. The beſt Method is, to plant the Cuttings in Pots fill'd with rich Earth, and to plunge the Pots into an old Hot-bed of Tanners Bark, where the Heat is almoſt over, and to ſhade the Glaſſes in the Heat of the Day, to ſcreen off the Sun, and keep the Cuttings duly moiſtened. With this Management I have ſeldom loſt any of the Cuttings, whereas ſcarce any of thoſe which have been planted much earlier in the Seaſon have ſucceeded. The Cuttings may remain in the ſame Pots till the following Summer, when they ſhould be carefully taken out, and each planted into ſeparate Pots, that they may be hous'd in Winter until ſome of them have obtain'd Strength, when they may be planted in warm Borders, where they will live thro' the Winter, without Covering, if the Froſt is not ſevere; but they ſhould be two Years old from the Cutting, before they are planted out in the full Ground.

PHYLLANTHUS, Sea-ſide Laurel.

The *Characters* are;

It hath Male and Female Flowers in the ſame Plant: the Empalement of both Sexes is of one Leaf, bell-ſhaped, and cut at the Brim into ſix Parts: there are no Petals to the Flower; but the Male have each three ſhort Stamina, *joining at the Baſe, but are ſpread open at their Top: the Female Flowers have a roundiſh Pointal, which becomes a roundiſh Seed-veſſel, having three Cells, which have a ſingle Seed in each.*

The *Species* are;

1. PHYLLANTHUS *foliis lanceolatis ſerratis, crenis floriferis.. Lin. Hort. Cliff.* Phyllanthus with ſaw'd ſpear-ſhap'd Leaves, bearing Flowers on their Edges, call'd Sea-ſide Laurel.

2. PHYLLANTHUS *foliis alternis alternatim pinnatis, floribus dependentibus*

tantibus ex alis foliolorum. Hort. Cliff. Annual Phyllanthus, with ſmall Leaves growing alternate, and the Flowers coming out from the Wings of the Leaves hanging down.

3. PHYLLANTHUS *caule arboreo, foliis lanceolatis acutis, fructu parvo ſeſſili.* Shrubby Phyllanthus, with pointed ſpear-ſhap'd Leaves, and ſmall Fruit growing cloſe to the Leaves.

4. PHYLLANTHUS *caule arboreo, foliis latis ſubrotundis, fructu majore pendulo, petiolo longo.* Tree Phyllanthus, with broad roundiſh Leaves, and larger Fruit growing on long Footſtalks.

5. PHYLLANTHUS *caule arboreo, foliis ovatis obtuſis, ſubtus incanis, alternatim ſitis, fructu maximo.* Tree Phyllanthus, with oval blunt Leaves, which are white on their Under-ſide, and a very large Fruit.

The firſt Sort is very common in the *Weſt-Indies*, where it grows out of the Rocks on the Sea-ſhore, in moſt of the Iſlands; but is ſeldom found growing on the Land, nor is it eaſily tranſplanted; for the Fibres of the Roots inſinuate themſelves ſo deeply into the Crevices of the Rocks, that unleſs the Rock is broken, there is no Poſſibility of getting the Roots out: and it is as difficult to propagate by Seeds; for unleſs they are ſown ſoon after they are ripe, they will not grow, and the greateſt Part of the Seed proves abortive; ſo that this Sort is very rare in *Europe*. There was formerly a Plant of this Sort in the Gardens at *Hampton-Court*; but this, with many other fine Plants, has been deſtroy'd by the Ignorance of the Gardeners.

This Tree grows about fifteen or ſixteen Feet high: the Leaves come out without any Order, which are five or ſix Inches long, ſmooth and thick: upon the Edges of the Leaves the Flowers are produc'd, but eſpecially toward the Upper-part, where they are plac'd very cloſely, ſo as almoſt to form a ſort of Border to the Leaves; which, together with the ſhining-green Colour of the Leaves, makes a very beautiful Appearance: the Leaves continue green all the Year, which renders the Plant more valuable.

There is no other Method of obtaining this Plant but to procure it from ſome of the Iſlands in *America*, where they grow in plenty. It is known in *Barbadoes* by the Name of Sea-ſide Laurel, which Name it is probable may have been given to it, from ſome Reſemblance which the Inhabitants of thoſe Iſlands ſuppos'd the Leaves to have of thoſe of the common Laurel; but they are much narrower and longer, and have no other Reſemblance but the Thickneſs, and ſhining-green Colour.

It requires to be plac'd in a moderate Stove in the Winter, otherwiſe it will not live in *England:* but in Summer it may be plac'd in the open Air, in a warm-ſhelter'd Situation. With this Management I have ſeen this Plant in great Vigour in the Phyſic-garden at *Amſterdam*.

The ſecond Sort is an annual Plant, which grows with an erect Stalk near two Feet high, and branches out on every Side: the Leaves are pennated, having ſeveral ſmall oval Leaves plac'd alternately along the Mid-rib: the Flowers are produc'd from the Wings of theſe little Leaves, the whole Length of the Mid-rib, on the Under-ſide, on very ſhort Footſtalks, which are of an herbaceous Colour, and hang downward: the whole Plant periſhes in Winter, being an Annual; for altho' it has been plac'd in the warmeſt Stoves, yet it never has ſurviv'd a Winter. The Seeds of this Plant ripen gradually, according as the Flowers were produc'd; thoſe neareſt the Stem ripening firſt; and if they are not watch'd, to gather them as they ripen, they will ſoon drop, and be loſt: but thoſe Seeds which happen to ſcatter upon other Pots of Earth will come up the following Spring; ſo that from ſome Plants, which were plac'd in a Stove, the Seeds were caſt over moſt of the Pots of Plants then in the Stove, and the Plants came up like Weeds: it was by this Accident the Plant was firſt brought to *England*; for the Seeds had been ſcatter'd in ſome Tubs of Earth which came from *Barbados*, in which the Plants came up in great Plenty; and having the Advantage of a Stove, the Seeds ripen'd perfectly, and were maintain'd by the ſcatter'd Seed: it is too tender to live in the open Air of *England*; ſo ſhould be rais'd on an Hot-bed in the Spring, and afterward plac'd in the Bark-ſtove, where the Plants will perfect their Seeds annually, and in Autumn decay.

The third Sort was diſcover'd by the late Dr. *William Houſtoun* at *La Vera Cruz*, who ſent the Seeds to *Europe*. This hath a woody Stem, which riſes to the Height of eight or ten Feet, and divides into ſeveral Branches, which are garniſh'd with pennated Leaves, compos'd of ſeveral ſmall pointed Leaves, plac'd alternately along the Mid-rib: the Flowers are produc'd as thoſe of the former, on the Under-ſide of the Leaves, hanging downward, and grow cloſe to the Mid-rib: the Leaves of this Sort decay in Autumn, and freſh ones come out in Spring. This is full as tender as the former Sort; ſo will not live in *England*, unleſs it is preſerv'd in Stoves.

The fourth and fifth Sorts were diſcover'd by the ſame Gentleman, who ſent the Seeds and dried Samples of both to *England*. Theſe grow twelve or fourteen Feet high, having ſtrong woody Stems, which branch out wide on every Side: the Branches of the fourth Sort are garniſh'd with broad roundiſh Leaves, which grow alternately along the Mid-rib: the Fruit grows on long Footſtalks plac'd on the Under-ſide of the Leaves hanging down: the Fruit of this Sort is about the Size of an Hazel-nut, ſwelling out in three Diviſions, like the Seed-veſſel of the Spurge: the Covering is ligneous, and of a brown Colour when ripe.

The fifth Sort has very broad Leaves, whoſe Surface is rough; and the Under-ſide of a whitiſh-grey Colour. Theſe are placed alternately upon the Branches. The Fruit of this Sort is as large as a Walnut, of a dark-brown Colour when ripe: the Cover is woody, and ſwells out in three Diviſions, in each of which ſhould be lodg'd a ſingle Seed; but it rarely happens that more than one of them comes to Maturity: nor in many of them is there one good Seed, tho' they appear large and fair; yet, upon Examination, ſcarce one in forty, of either the fourth or fifth Sorts, had any Germ, but were hollow.

Theſe are alſo very tender Plants; ſo muſt be placed in a warm Stove, otherwiſe they cannot be preſerv'd in *England*. All theſe four laſt-mention'd Sorts are eaſily propagated from good Seeds, which muſt be ſown on an Hot-bed in the Spring; and afterward planted in Pots, and placed in the Bark-ſtove, treating them in the ſame manner as hath been directed for other Exotic Plants from the ſame Country.

Theſe Plants many of them grow in the *Eaſt-Indies*, where there are ſeveral other Species of this Genus, ſome of which are well figur'd and deſcrib'd in the *Hortus Malabaricus*, under the Title of *Niruri*; which Name has been applied by ſome Botaniſts to the Genus, under which the four laſt Species have been ranged; but that, being a barbarous Name, is rejected by Dr. *Linnæus*, who has remov'd theſe to the firſt Sort, and taken that Title to the Genus; and as they pretty well agree in their Characters with the firſt Species, ſo I think it better to join them, than to divide them into two *Genera*, eſpecially as there have been Doubts where to fix them; for, by ſome, theſe Species of *Niruri* were joined to *Tournefort*'s Genus of *Telephioides*; but I think their Characters correſpond much better with thoſe of the *Phyllanthus*.

PHYLLIS; *Simpla Nobla dicta*.

The *Characters* are;

The Empalement of the Flower is very ſmall, and compoſed of two Leaves: the Flower hath five obtuſe Petals, which ſeem joined at their Baſe: in the Bottom of the Flower is ſituated the Pointal, attended by five ſhort ſlender Stamina: *the Pointal afterward becomes an oblong turbinated Fruit, compoſed of two Seeds which join together, where they are plain, and are convex on the other Side: to which may be added, The Flowers growing in an Umbel.*

I have not obſerv'd more than one *Species* of this Genus in the *Engliſh* Gardens; which is,

PHYLLIS *ſtipulis dentatis. Flor. Leyd.* Simpla Nobla.

There is another *Species* mention'd by Dr. *Van Royen*, in the *Flora Leydenſis*, which he titles *Phyllis ſtipulis integerrimis*: but this Difference I have not obſerv'd in any of the Plants, which are growing in our Gardens.

This Plant was brought from the *Canary* Iſlands, and has been long an Inhabitant of many curious Gardens in *England*, and was known for many Years by the Name of *Simpla Nobla*: and having had no *Engliſh* Name applied to it, I have continu'd that Title for want of an *Engliſh* one: nor could the Botaniſts agree under what Genus to range this Plant: Dr. *Boerhaave* was the firſt who eſtabliſh'd a Genus for it under the Title of *Bupleuroides*, as this Plant hath ſome Affinity to the *Bupleurum*: but others have plac'd it under that of *Valerianella*, as ſuppoſing its Characters agreed better with thoſe of that Genus: but Dr. *Linnæus* has rejected both thoſe Titles, and applied this of *Phyllis* to this Plant, on the Account of the Beauty of its Leaves; for the Flowers have no more Beauty than thoſe of Hemlock, or other umbelliferous Plants.

This rarely grows above two Feet high, having a ſoft woody Stem, which branches out very low on every Side: theſe Branches will extend pretty wide, ſo as to form a ſpreading Shrub: the Leaves are large, and deeply vein'd, and remain green thro' the Year, in which the greateſt Beauty of the Plant conſiſts: the Flowers are produc'd in Umbels at the Extremity of the Branches, which are of a yellowiſh-green Colour, and are ſucceeded by Seeds growing in a looſe Umbel.

It is propagated by Seeds which muſt be ſown on a Bed of freſh light Earth in *March*; and when the Plants are fit to tranſplant, they ſhould be put into ſeparate Pots, and placed in a ſhady Situation until they have taken Root; after which time they ſhould be placed in a Situation where they may have the morning Sun; and in Summer will require to have plenty of Water. In Winter they muſt be ſheltered from the Froſt; but require to have as much free Air as poſſible, in mild Weather; and if in the Spring ſome of the Plants are ſhaken out of the Pots, and put into the full Ground, they will perfect their Seeds much better than thoſe which remain in the Pots.

As theſe Plants ſeldom continue in Health above four or five Years, it will be proper to raiſe a Supply of young ones to ſucceed them.

PHYTOLACCA, *American* Nightſhade.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are placed in a circular Order, and expand in form of a Roſe; out of whoſe Centre riſes the Pointal, which afterward becomes a ſoft Fruit, or almoſt globular Berry full of Seeds, placed orbicularly: to which ſhould be added, That the Flowers and Fruit are produced on a Bunch like Currans.

The *Species* are;

1. PHYTOLACCA *Americana, majori fructu. Tourn. American* Nightſhade, with large Fruit, commonly call'd *Virginian* Poke, or Porke Phyſic.

2. PHYTOLACCA *Mexicana, baccis ſeſſilibus. Hort. Elth. Mexican* Phytolacca, whoſe Berries grow cloſe to the Stalk.

The firſt of theſe Plants is very common in *Virginia, New-England,* and *Maryland,* where the Inhabitants take a Spoonful or two of the Juice of the Root, as a familiar Purge. The Berries thereof are full of a purple Juice, which gives a fine Tincture to Paper, from whence it hath the Name: this will not abide long, but fades in a ſhort time: therefore, if there could be a Method found to fix this Colour, it might be of conſiderable Uſe; for it is one of the moſt beautiful purple Dyes yet known.

It may be propagated by ſowing Seeds in the Spring upon a Bed of light rich Earth; and when the Plants come up, they ſhould be tranſplanted into the Borders of large Gardens, allowing them Space to grow; for they muſt not be planted too near other Plants, leſt they overbear and deſtroy them; for they grow to be very large, eſpecially if the Soil be good. When they have taken Root, they will require no farther Care but only to clear them from Weeds, and in Autumn they will produce their Flowers and Fruit: but when the Froſt comes on, it will cut down the Stems of theſe Plants, which conſtantly decay in Winter; but their Roots will abide in the Ground, and come up again the ſucceeding Spring. There is no great Beauty in this Plant; but, for Variety, a few of them may be placed in the Borders of large Gardens, ſince they require but little Culture; and as they grow very tall, they will make a Figure in the Borders of large Gardens, eſpecially in the Autumn, when the Spikes of purple Fruit are ripe. I have ſeen Plants of this Kind upward of ſix Feet high, when they have been in good Ground. As theſe Plants ſeldom continue longer than three or four Years, young ones ſhould be raiſed to ſucceed them.

The ſecond Sort is a Native of the warmer Parts of *America*; ſo will not live in the open Air in *England*. This has been lately introduc'd into ſome of the *Britiſh* Iſlands in *America*, from the *Spaniſh Weſt-Indies*, where it grows ſpontaneouſly; and the Inhabitants cut the green Herb, and boil it for Spinach, which they eat without any ill Effect, tho' it has been by ſome Perſons thought to have the Quality of Nightſhade.

The Seeds of this Sort ſhould be ſown upon an Hot-bed early in the Spring; and when the Plants are fit to tranſplant, they ſhould be put into Pots; and after they have acquir'd Strength, may be enured to bear the open Air, where they may remain till the Autumn, when they ſhould be remov'd into Shelter; and if they are placed where they may have a moderate Share of Warmth, they will flower all the Winter, and ripen their Fruit in the Spring. Dr. *Linnæus* ſuppoſes theſe two Species are the ſame, in which he is greatly miſtaken.

PILOSELLA. *Vide* Hieracium.

PIMPINELLA. *Vide* Sanguiſorba *and* Poterium.

PINASTER. *Vide* Pinus Sylveſtris.

PINGUICULA, Butterwort.

This Plant is found growing upon Bogs in many Parts of *England*; but is never cultivated in Gardens; ſo I ſhall paſs it over with barely mentioning it.

PINUS, The Pine-tree.

The *Characters* are;

It hath amentaceous Flowers, or Katkins, which are produced at remote Diſtances from the Fruit on the ſame Tree: the Seeds are produced in ſquamous Cones: to which ſhould be added, That the Leaves are longer than thoſe of the Fir-trees, and are produced by Two's or more out of each Sheath.

The *Species* are;

1. Pinus *ſativa. C. B. P.* The manured Pine.

2. Pinus *ſylveſtris. C. B. P.* The Pinaſter, or Wild Pine.

3. Pinus *ſylveſtris, foliis brevibus glaucis, conis parvis albentibus. Raii Hiſt.* The *Scotch* Pine, commonly call'd the *Scotch* Fir.

4. Pinus *Americana, foliis prælongis, ſubinde ternis, conis plurimis confertim naſcentibus. Rand. American* Pine, with longer Leaves coming out by Threes, and many Cones growing in a Cluſter; commonly called the Cluſter Pine.

5. Pinus *Americana, ex uno folliculo, ſetis longis tenuibus triquetris, ad unum angulum, per totam longitudinem, minutiſſimis crenis aſperatis. Pluk. Amalth.* Lord *Weymouth*'s Pine; or, by ſome, the *New-England* Pine.

6. Pinus *ſylveſtris montana tertia. C. B. P.* The third wild mountain Pine, of *Caſpar Bauhin.*

7. Pinus *ſylveſtris montana altera. C. B. P.* Another wild mountain Pine.

8. Pinus *ſylveſtris maritima, conis firmiter ramis adhærentibus. J. B.* Wild maritime Pine, whoſe Cones adhere firmly to the Branches.

9. Pinus *maritima altera Matthioli. C. B. P.* Another maritime Pine of *Matthiolus.*

10. Pinus *maritima minor. C. B. P.* Leſſer maritime Pine.

11. Pinus *humilis, iulis vireſcentibus aut palleſcentibus. Inſt. R. H.* Dwarf Pine, with a green or pale Katkin.

12. Pinus *humilis, iulo purpuraſcente. Inſt. R. H.* Dwarf Pine, with a purpliſh Katkin.

13. Pinus *conis erectis. Inſt. R. H.* Pine whoſe Cones grow erect.

14. Pinus *Orientalis, foliis durioribus amaris, fructu parvo peracuto. Tourn. Cor.* Eaſtern Pine, with harder bitter Leaves, and a ſmall ſharp-pointed Cone.

15. Pinus *Hieroſolymitana, prælongis & tenuiſſimis viridibus ſetis. Pluk. Almag.* Eaſtern Pine, with long narrow green Leaves; commonly called the *Aleppo* Pine.

16. Pinus *Virginiana, prælongis foliis tenuioribus, cono echinato. Pluk. Almag. Virginian* Pine, with long narrower Leaves, and a rough Cone; commonly called Baſtard three-leav'd Pine.

17. Pinus *Virginiana, ternis ſeu tripilis plerumque ex uno folliculo ſetis, ſtrobilis majoribus. Pluk. Almag. Virginian* Pine, having, for the moſt part, three Leaves, coming out of one Sheath; commonly called the Frankincenſe-tree.

18. PINUS *Virginiana, binis brevioribus & craſſioribus ſetis, minore cono, ſingulis ſquamarum capitibus aculeo donatis. Pluk. Alm.* Virginian Pine, with ſhorter thicker Leaves, and ſmaller Cones, with a Prickle on the Top of each Scale; commonly called the *Jerſey* Pine.

19. PINUS *Americana paluſtris, longiſſimis & viridibus ſetis.* Marſh American Pine, with the longeſt green Leaves.

The firſt Sort is much cultivated in *Italy*, and the South of *France*, where the Trees grow to a large Size; and are the great Ornament of the *Italian* Villa's: this Sort is alſo in *Spain*, *Portugal*, and moſt of the warm Parts of *Europe*; where the Nuts which contain the Seeds are frequently ſerved up to the Table, and are eaten in the ſame manner as the *Piſtachia* Nut: and theſe were formerly uſed in Medicine in *England*; but of late Years they have been neglected, and *Piſtachia* Nuts ſubſtituted in their Place.

The Cones of this Sort are very large, and the Scales are broad and flat: the Nuts or Seeds are as large as thoſe of the Hazel, but are of an oval Figure: the Shell is very hard, and when freſh taken out of the Cone, is covered with a purple *Farina*, which will colour the Hands: each of the Cones, if well grown, will contain upward of fourſcore Nuts: the Leaves of this Tree are long, and of a glaucous Colour: theſe are, for the moſt part, produced by Pairs out of each Sheath; tho' ſometimes, in young Plants, I have obſerved three. If theſe Trees have room to ſpread, they will extend their Branches to a great Diſtance on every Side, near the Ground; and ſeldom make much Progreſs upward; but rather form their Heads into a conical Figure.

Where this Tree naturally grows, is not eaſy to determine; for it is not a Native of *Europe*, there being none of them found now growing, but in ſuch Places where they have been planted; ſo that there are not any of them found in Woods, or uncultivated Places; this Sort certainly is in plenty in *China*, from whence I have ſeveral times received the Seeds; and in a Collection of the *Materia Medica*, which was brought me from thence, were a Parcel of theſe Nuts: in many of the *China* Paintings there are ſome of theſe Trees exhibited; but whether it grows naturally in that Country, I cannot learn.

This Sort thrives very well in *England*, when it is planted in a warm Situation; but it is too tender to thrive in cold expoſed Places, where in ſevere Froſt the Leaves are generally killed; and many times all the tender Shoots are deſtroyed, whereby the Trees are rendered very unſightly; but in warm Situations, where theſe Trees thrive well, they make a very handſome Appearance; but in order to get them up with Stems, they ſhould be planted pretty cloſe, that they may be drawn upright, otherwiſe they will ſend forth many lateral Branches near the Ground to a great Diſtance, which will prevent their growing tall: and as theſe reſinous Trees are apt to bleed greatly when they are pruned, their lateral Branches ſhould never be encouraged; becauſe they cannot be pruned off with Safety, when they are grown large.

This Tree is propagated by Seeds, which ſhould be ſown in *March*, on a Border of light Earth expoſed to the morning Sun: the beſt Way will be to draw Drills about two Inches deep, into which the Seeds may be ſcattered about an Inch aſunder; the Drills may be drawn about three Inches Diſtance from each other. If the Spring ſhould prove very dry, it will be proper to ſupply the Border with Water twice a Week: for as the Covers of the Seed are very hard unleſs they have a pretty good Share of Moiſture, they will not vegetate; but when the Coverings burſt, and the young Plants begin to come out, the Watering muſt be but ſparingly performed; for too much Wet will rot the tender Stems of the Plants: they muſt alſo be carefully defended from Birds, otherwiſe they may be all deſtroyed in a few Hours, by theſe rapacious Creatures, which are fond of pecking the Heads off theſe Plants before they are well out of the Ground: and if the Bed is ſhaded in the Heat of the Day from the Sun, it will prevent the Earth from drying too faſt; and preſerve the Plants from being injured by the Violence of the Sun's Heat, which they cannot well bear the firſt Seaſon. Sometimes in dry Seaſons I have known the Seeds remain a Year in the Ground, and often three or four Months: therefore the Border or Bed in which they are ſown ſhould not be diſturbed, if the Plants ſhould not come up ſo ſoon as they are expected.

If the Seeds ſucceed well, the Plants will appear in about five or ſix Weeks after they are ſown; and then the Directions before given muſt be obſerved, as alſo to keep the Bed clean from Weeds; and if in dry Weather they are gently watered two or three times a Week, it will promote the Growth of the Plants: but this muſt be performed with great Care; for if it is poured too haſtily, or given in too great Plenty, it will cauſe the Stems to rot juſt at the Surface of the Ground; and for want of this Care great Numbers of theſe Plants have been deſtroyed ſoon after they made their Appearance above-ground.

As many of the Sorts of Pines are with ſome Difficulty preſerved thro' the firſt Winter, but particularly the manured Pine, the beſt Method of treating them is to tranſplant them about *Midſummer*, out of the Seed-bed, chooſing, if poſſible, a cloudy Day for this Work: but whenever this is done, the Plants ſhould be kept as little time out of the Ground as poſſible, leſt their tender Fibres ſhould be dried by the Air: to prevent which, it will be proper to have ſhallow Pans of Water, into which the Plants may be laid, as they are taken up, and ſo carried to the Place where they are to be planted. All the other Sorts of *Pines* may then be planted in Beds, at about four Inches Diſtance every Way; and the Beds ſhould be arched over with Hoops, that they may be covered every Day with Mats, to ſcreen the Plants from the Sun, until they have taken good Root: but as this Sort of Pine is with Difficulty tranſplanted, it will be the ſureſt Method to plant them into ſmall Pots, at their firſt removing out of the Seed-bed; if the Pots are plunged cloſe together, either in a common Border, or an old Bed of Tan, which has no Heat, it will prevent the Earth in the Pots from drying too faſt: and then theſe may alſo be arched over, and covered with Mats in the ſame manner as the other: and if theſe are continued in the ſame Bed all the following Winter, they may be covered in ſevere Froſt, which often deſtroys the Plants while they are young, when they are expoſed to it.

The Plants ſhould be ſhifted out of the Pots when their Roots have filled them, and planted into larger Pots; being careful in the doing of this, not to ſhake the Earth from their Roots; and if the Pots are plunged into the Earth, it will prevent the Earth in the Pots from drying too faſt in Summer, and alſo keep out the Froſt in Winter: which, if the Pots ſtood on the Surface of the Ground, would penetrate thro' the Sides to the Roots of the Plants, and injure them greatly; theſe Plants may remain three or four Years in Pots; by which time they will have acquired ſufficient Strength to be planted where they are deſigned to remain, which may be performed at almoſt any time of the Year; becauſe they muſt be ſhaken out of the Pots with the whole Ball of Earth; ſo will not feel their Removal: but if it can be done in *April*, juſt before the Plants begin to ſhoot, they will then have the whole Summer to get rooting in their new Quarters; ſo will be in leſs Danger of ſuffering the following Winter by the Cold: altho' there is Trouble in the Management of the Plants in this Method, yet I am certain there is no other way of propagating or tranſplanting them with Safety; therefore it is that I would recommend this to every Perſon, who is deſirous to have theſe Trees in their Gardens or Plantations.

The Pinaſter hath been long cultivated in *England*: but of late Years hath been in leſs Eſteem than formerly; becauſe as they grow large, their Branches are ragged, and bare of Leaves; ſo that they have but an indifferent Appearance; tho' while they are young, the Plants make great Progreſs, and have an handſome Appearance; which has tempted many Perſons to propagate theſe Trees; but as they have advanced in Stature, they have declined in Beauty; and their Wood being of little Value, has in a great meaſure brought them into Diſrepute.

The *Scotch* Pine, which is generally called the *Scotch* Fir, is the moſt profitable of all the Sorts, to cultivate in large Plantations; and will grow in almoſt any Soil or Situation; for in the moſt barren Sand, where little elſe but Fern and Heath would grow, I have ſeen Plantations of theſe Trees thrive much beyond Expectation; and upon chalky Hills, where there have been ſcarce three Inches of Earth, there are many noble Plantations of this Sort. I have alſo obſerved, where they have been planted in a ſtrong Clay, and alſo in a moiſt peaty Soil, that they have grown to Admiration; ſo that there is no Part of *England*, in which theſe Trees might not be propagated to conſiderable Advantage.

But where theſe Trees are deſign'd to be planted in large Quantities, it will be much the better way to make a Nurſery on the Spot where the Seeds ſhould be ſown, and the Plants raiſed until they are three Years old, which is a proper Age to plant them out for good; for the younger they are planted, the better they will thrive, provided they are kept clear from Weeds: and if the Situation where they are intended to ſtand is much expoſed to Winds, the Plants ſhould be planted cloſer together, that they may be a Shelter to each other, and draw themſelves upward: and as the Trees advance, they may be thinned by degrees; and the Thinnings of theſe Plantations have, in many Places, paid the Expence of planting for; theſe are very ſerviceable for Scaffolding, and many other uſeful Buſineſſes.

It is the Wood of this Tree which is the red or yellow Deals, and is more valuable than that of any other Sort of Pine or Fir: this is a Native of *Denmark*, *Sweden*, and many other Northern Countries: and in the Highlands of *Scotland* there are ſeveral large Woods of this Tree now growing; and the Seeds being brought from thence into *England*, has occaſioned the Name of *Scotch* Fir being generally applied to it here; but in *Norway* it is called *Grana*.

The Cluſter Pine is by moſt Perſons little known; for the Pinaſter, as alſo the two other Sorts of mountain Pines, are in many Places cultivated by this Name; and, in ſhort, every Sort, whoſe Cones are produced in large Bunches: but the Sort here mentioned was brought from *America*, and is very different from either of theſe: there were two or three of theſe Trees growing ſome Years ſince in the Gardens of the Biſhop of *London*, at *Fulham*, which produced plenty of Cones ſeveral Years.

The fifth Sort, which is commonly called Lord *Weymouth*'s Pine, or the *New-England* Pine, is by much the talleſt-growing Tree of all the Kinds; and the Leaves being very long, and cloſely placed on the Branches, renders it more beautiful than any other; and the Bark of the Stems and Branches is alſo exceeding ſmooth, which is an Addition to the Beauty of the Tree: the Leaves of this Sort are produced five out of each Sheath; and are of a glaucous Colour: the Trees generally form themſelves into conical Heads, and have ſtrait Stems, which riſe to more than one hundred Feet high, in the Countries where it naturally grows: there are ſome very tall Trees of this Kind, at Sir *Wyndham Knatchbull*'s Seat near *Aſhford* in *Kent*; which have been many Years there unnoticed, till, about twenty-ſix Years ago, the Seeds were brought to *London* for Sale: there are alſo ſome large Trees of this Kind growing at *Longleat*, the Seat of the Right Hon. the Lord Viſcount *Weymouth*, which have produced Cones many Years paſt; and from thence the Trees were called *Lord Weymouth*'s *Pine*. The Cones of this Sort are long, the Scales looſe and flat: the Seeds are pretty large, and frequently drop from the Cones, if they are not gathered early in Autumn: this Tree delights in a moiſt looſe Soil; for in the natural Places of its Growth the Ground is wet, and of a looſe Texture. In *New-England*, *Virginia*, *Carolina*, and ſeveral other Parts of *North-America*, theſe Trees abound, where they are called the white Pine; but the Wood is little eſteemed there, being ſoft, and very white: however, for ſuch Plantations as are deſign'd for Pleaſure, there is not any of the Species equal to this for Beauty, where the Trees thrive well.

The ſixth, ſeventh, eighth, ninth, tenth, eleventh, twelfth, and thirteenth Sorts grow in *Spain*, *Portugal*, *Italy*, *Auſtria*, and other Parts of *Europe*, where there are ſome other Varieties than are here enumerated: but as very few of theſe have been introduced into *England*, they cannot be well diſtinguiſhed from the others, by the imperfect Deſcriptions which we have of them in Books: moſt of theſe Sorts are Inhabitants of the mountainous Parts of *Europe*; ſo they are very hardy in reſpect to Cold; therefore they may be eaſily propagated in *England*, were their Seeds brought hither in the Cones: ſome of theſe are of very humble Growth, particularly the eleventh and twelfth, which in many Places do not exceed four Feet high, and produce plenty of Cones: the other Sort grows after the ſame manner as the ſecond Sort; ſo are not very beautiful Trees; but a few of each Sort may be interſperſed with the other more valuable Kinds, in large Plantations of ever-green Trees, by way of Variety.

The fourteenth and fifteenth Sorts grow in the *Levant*, from whence their Seeds have been brought to *England*, where there are ſeveral Plants of the fifteenth Sort now growing in ſome curious Gardens; but the fourteenth is more rare at preſent: theſe are not quite ſo hardy as the others; for in the ſevere Winter of 1739. I had ſeveral Plants of both Kinds which were intirely deſtroyed; ſome of which were upward of ten Feet high; but they will endure the Cold of our common Winters very well. There are two Plants of the fifteenth Sort in the Gardens of his Grace the Duke of *Richmond* at *Goodwood* in *Suſſex*, which have produced Cones for ſome Years paſt; but they have not perfected their Seeds as yet.

The Branches of theſe Trees are ſlender, and extend to a great Diſtance from the Trunk; they are produced in Circles at Diſtances above each other; but grow very irregular and looſe: the Leaves are long, ſlender, and of a deep-green Colour: the Cones are ſhaped ſomewhat like thoſe of the manured Pine; but are much ſmaller: the Seeds of this Kind will keep good ſome Years, when taken out of the Cones. I have ſown of theſe Seeds when three Years old, which grew as well as any new Seeds of the ſame Year; and the Plants came up in a Bed of common Earth without Trouble.

The ſixteenth, ſeventeenth, eighteenth, and nineteenth Sorts are Natives of *America*; from whence their Cones have been ſent to *England*; and many of the Plants have been raiſed: theſe grow in *New-England*, *Maryland*, *Virginia*, and *Carolina*: the ſixteenth Sort grows to be a large Tree, and makes an handſome Appearance; and when planted in a moiſt light Soil, is very quick of Growth: but the ſeventeenth is by far the finer Sort, tho' at preſent very rare in *England*: the Leaves of this Sort are of a great Length, and are three or four produced from each Sheath: the Cones are large, and almoſt in Shape of thoſe of the manured Pine: there was a great Number of theſe Trees growing in the Gardens of Mr. *Ball*, near *Exeter*, which were all deſtroyed by tranſplanting them at an improper Seaſon.

The eighteenth Sort is ſcarce worthy of a Place, on account of its irregular Growth. This Sort never grows to any great Size in its native Country, and ſoon becomes ragged and unſightly: there have been great Numbers of Trees of this Sort raiſed in *England*, ſince the Taſte for introducing of Foreign Trees and Shrubs has prevail'd here; but in many Places they are already become ſo unſightly, that they are at preſent deſtroying by their Owners.

There are very few Plants of the nineteenth Sort at preſent in *England*, which are grown to any Height; but ſome Years ago there were many of them growing at Mr. *Ball*'s, near *Exeter*, which were upward of ten Feet high; but theſe were deſtroyed by their Owner, who did not like them: this Sort grows on Swamps in *America*, and is with Difficulty preſerved upon dry Land; nor do the Plants make much Progreſs when placed in ſuch Situations: the Leaves of this Sort are very long, and of a dark-green Colour: the Stems of the Plants are of a looſe Texture, covered with a rugged Bark; ſo are not very beautiful: this Sort is not ſo hardy as the others; therefore requires to have a warm Situation, and ſhould be defended from ſevere Froſts while the Plants are young.

There are ſome other Species of theſe Trees, which are Natives of *America*; but thoſe here mentioned are what I have met with in the *Engliſh* Gardens; nor can I learn how the other Sorts differ from theſe, altho' ſome of the Inhabitants diſtinguiſh them by Names of their own adopting: there are alſo ſome Sorts which grow in *Ruſſia* and *Siberia*, which are different from theſe here enumerated: but the few Plants which have been raiſed in *England*, from the Seeds which have been procured from thence, make ſo little Progreſs here, as to give no Hopes of their growing to any Size in this Country: ſo I have omitted their Names in this Liſt.

All the Sorts of Pines are propagated by Seeds, which are produced in hard woody Cones: the way to get out their Seeds is, to lay the Cones before a Fire, which will cauſe the Cells to open; and then the Seeds may be eaſily taken out: if the Cones are kept intire, the Seeds will remain good ſome Years; ſo that the ſureſt way to preſerve them is, to let them remain in the Cones until the time for ſowing the Seeds: but if the Cones are kept in a warm Place in Summer, they will open, and emit the Seeds; but if they are not expoſed to much Heat, they will remain intire ſome Years; and the Seeds which have been taken out of Cones of ſeven Years old, have grown very well; ſo that theſe may be tranſported from any Diſtance, provided the Cones are well ripened, and properly put up.

The beſt time for ſowing the Seeds of Pines is about the Middle of *March*; and when the Seeds are ſown, the Place ſhould be covered with Nets, to keep off Birds; otherwiſe, when the Plants begin to appear with the Huſk of the Seed on their Tops, the Birds will pick off the Heads of the Plants, and deſtroy them. What is before mentioned of tranſplanting the young Plants about *Midſummer*, I beg leave to repeat again here, becauſe I have ſeen this practiſed with great Succeſs: and it frequently happens, that the Plants which remain in the Place where they were ſown, die away in Patches: nor do the Plants which remain grow near ſo ſtrong as thoſe which are pricked out young: but when this is done, the Plants muſt be water'd and ſhaded until they have taken freſh Root; after which time the only Culture they require is, to keep them clean from Weeds. In theſe Beds the Plants may remain till the next Spring twelve Months after: by which time the Plants will be fit to tranſplant where they are to remain for good; for the younger the Plants are, when planted out, the better they will ſucceed; for altho' ſome Sorts will bear tranſplanting at a much greater Age, yet young Plants planted at the ſame time will in a few Years overtake the large Plants, and ſoon outſtrip them in their Growth: and there is an Advantage in planting young, by ſaving the Expence of Staking, and much Watering, which large Plants require. I have ſeveral times ſeen Plantations of ſeveral Sorts of Pines, which were made of Plants ſix or ſeven Feet high; and at the ſame time others of one Foot high planted between them; which in ten Years were better Trees than the old ones, and much more vigorous in their Growth: but if the Ground where they are deſign'd to remain, cannot be prepared by the time the Plants ſhould be planted out, they may be removed out of the Beds into a Nurſery, where they may remain two Years, but not longer; for it will be very hazardous removing theſe Trees at a greater Age.

The beſt Seaſon to tranſplant all the Sorts of Pines is about the Latter-end of *March*, or the Beginning of *April*, juſt before they begin to ſhoot: for altho' the *Scotch* Pine, and ſome of the moſt hardy Sorts, may be tranſplanted in Winter, eſpecially when they are growing in ſtrong Land, where they may be taken up with Balls of Earth to their Roots; yet this is what I would not adviſe for common Practice, having frequently ſeen it attended with bad Conſequences; but thoſe which are removed in the Spring rarely fail.

Where theſe Trees are planted in expoſed Situations, they ſhould be put pretty cloſe together, that they may ſhelter each other; and when they are too cloſe, Part of the Plants may be cut down, to give room for the others to grow: but this muſt be gradually performed, leſt by too much opening the Plantation, the Air ſhould be let in among the remaining Trees with too great Violence, which will ſtop the Growth of the Trees.

Altho' theſe ever-green Trees are by many Perſons deſpiſed on account of their Dark-green in Summer; yet a proper Mixture of theſe in large Clumps makes a fine Appearance about a Seat in Winter; and in Summer, by their Contraſt with other Trees, has no bad Effect in diverſifying the Scene.

PISONIA, Fingrigo, *vulgo*.

The *Characters* are;

It is Male and Female in different Plants: the Male Flowers conſiſt of a great Number of Stamina, *and have no Petals: the Female Flower conſiſts of one Leaf, which is bell-ſhaped, and divided at the Top into five Parts; from whoſe Cup ariſes the Pointal, which afterward becomes an oblong angular chanelled Fruit, containing oblong Seeds.*

The *Species* are;

1. Pisonia *aculeata mas. Houſt.* The Male Fingrigo.

2. Pisonia *aculeata, fructu glutinoſo & racemoſo. Plum. Nov. Gen.* Prickly Piſonia, with a glutinous and branching Fruit.

Theſe Plants are ſeminal Variations, which ariſe from the Seeds of the ſame Plant; but as they were not diſtinguiſh'd by any of the Botaniſts, till the late Dr. *Houſtoun* obſerved their Difference, therefore I thought proper to mention the different Sexes as ſeparate Plants.

The Name of this Plant was given by Father *Plumier* in Honour to Dr. *William Piſo*, who publiſh'd a Natural Hiſtory of *Braſil*. The Name of *Fingrigo* is what the Inhabitants of *Jamaica* know it by.

Theſe Plants are very common in the *Savanna*'s, and other low Places, in the Iſland of *Jamaica*, as alſo in ſeveral other Places in the *Weſt-Indies*; where it is very troubleſome to whoever paſſes through the Places of their Growth, by faſtening themſelves, by their ſtrong crooked Thorns, to the Cloaths of the Perſons; and their Seeds, being glutinous, alſo faſten themſelves to whatever touches them: ſo that the Wings of the Ground-doves, and other Birds, are often ſo loaded with the Seeds, as to prevent their flying; by which means they become an eaſy Prey.

It riſes about ten or twelve Feet high, with a pretty ſtrong Trunk; but the Branches are long and ſlender, which, being unable to ſupport them, themſelves, generally twiſt about whatever Plants are near them.

In *Europe* this Plant is preſerved in the Gardens of ſome curious Perſons for Variety: it is propagated by Seeds, which ſhould be ſown in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark; and when the Plants come up, they ſhould be tranſplanted into ſeparate Pots, and plunged into the Hot-bed again; where they may remain till *Michaelmas*, when they ſhould be removed into the Stove, and plunged into the Bark-bed, and treated in the ſame manner as hath been directed for ſeveral tender Plants of the ſame Country; obſerving in hot Weather to give them plenty of Water; but in Winter they ſhould have it more ſpairingly. They are too tender to thrive in the open Air of this Country at any Seaſon of the Year; wherefore they ſhould be conſtantly kept in the Stove.

PISTACHIA. *Vide* Terebinthus.

PISUM, Pea.

The *Characters* are;

It is a Plant with a papilionaceous Flower, out of whoſe Empalement riſes the Pointal, which afterward becomes a long Pod, full of roundiſh Seeds: to which muſt be added, Fiſtulous Stalks, for the moſt part weak, which the Leaves embrace in ſuch a manner, that they ſeem to be perforated by them; but the other Leaves grow by Pairs along the Mid-rib, ending in a Tendril.

The *Species* are;

1. PISUM *hortenſe majus, flore fructuque albo. C. B. P.* The greater Garden Pea, with white Flowers and Fruit.

2. PISUM *præcox Anglicum. Boerh. Ind.* Hotſpur Pea, *vulgo*.

3. PISUM *humile, caule firmo. Tourn.* The Dwarf Pea.

4. PISUM *humile Gallicum. Boerh. Ind. French* Dwarf Pea.

5. PISUM *cortice eduli. Tourn.* Pea with an eſculent Huſk.

6. PISUM *ſiliqua carnoſa incurva, ſeu falcata eduli. Raii Hiſt.* The Sickle Pea.

7. PISUM *arvenſe, fructu albo. C. B. P.* Common White Pea.

8. PISUM *arvenſe, fructu viridi. C. B. P.* Green Rouncival Pea.

9. PISUM *arvenſe, fructu cinereo. C. B. P.* The Grey Pea.

10. PISUM *arvenſe, flore roſeo, fructu variegato. Raii Hiſt.* Marble Rouncival Pea.

11. PISUM *umbellatum. C. B. P.* The Roſe Pea, or Crown Pea.

12. PISUM *maximum, fructu nigra linea maculato. H. R. Par.* The *Spaniſh* Morotto Pea.

13. PISUM *hortenſe, ſiliqua maxima. H. R. Par.* The Marrow-fat or *Dutch* Admiral Pea.

14. PISUM *fructu maximo ex viridi obſoleto. Boerh. Ind.* The Union Pea.

15. PISUM *ſpontaneum maritimum Anglicum. Park. Theat. Engliſh* Sea Pea.

16. PISUM *arvenſe, fructu è luteo vireſcente. C. B. P.* Pig Peas.

There are ſeveral other Varieties of the Garden Peas, which differ in the Colour of their Flowers and Fruit, and are by ſome Perſons diſtinguiſh'd by Names as diſtinct Sorts; but as they are very ſubject to vary when ſown two or three Years in the ſame Place, there can be no Doubt of their being ſeminal Variations, which are not worth enumerating in this Place.

The *Engliſh* Sea Pea is found wild upon the Shore in *Suſſex*, and ſeveral other Counties in *England*. This was firſt taken notice of in the Year 1555. between *Orford* and *Aldborough*, where it grew upon the Heath, where nothing, no not Graſs, was ever ſeen to grow; and the poor People, being in Diſtreſs, by reaſon of the Dearth of that Year, gathered large Quantities of theſe Peas, and ſo preſerv'd themſelves and Families. This is mention'd by *Stow* in his *Chronicle*, and *Camden* in his *Britannia*: but they were both miſtaken, in imagining that they were Peas caſt on Shore by a Shipwreck, ſeeing they grow in divers other Parts of *England*, and are undoubtedly a different Species from the common Pea.

The ſixteenth Sort is greatly cultivated in the Fields in *Dorſetſhire*, where they are known by the Name of Pig Peas, the Inhabitants making great Uſe of them to feed their Hogs. Theſe are often brought up to *London*, and ſold for the ſame Purpoſe.

I ſhall now proceed to ſet down the Method of cultivating the ſeveral Sorts of Garden Peas, ſo as to continue them throughout the Seaſon.

It is a common Practice with the Gardeners near *London*, to raiſe Peas upon Hot-beds, to have them very early in the Spring; in order to which, they ſow their Peas upon warm Borders under Walls or Hedges, about the Middle of *October*; and when the Plants come up, they draw the Earth up gently to their Stems with an Hoe, the better to protect them from Froſt: in theſe Places they let them remain until the Latter-end of *January*, or the Beginning of *February*; obſerving to earth them up from time to time, as the Plants advance in Height (for the Reaſons before laid down); as alſo to cover them in very hard Froſt with Peas-haulm, Straw, or ſome other light Covering, to preſerve them from being deſtroy'd: then, at the time before-mention'd, they make an Hot-bed (in proportion to the Quantity of Peas intended), which muſt be well work'd in laying the Dung, that the Heat may not be too great. The Dung ſhould be laid about two Feet thick, or ſomewhat more, according as the Beds are made earlier or later in the Seaſon: when the Dung is equally levell'd, then the Earth (which ſhould be light and freſh, but not over-rich) muſt be laid on about ſix or eight Inches thick, laying it equally all over the Bed. This being done, the Frames (which ſhould be two Feet on the Back-ſide, and about fourteen Inches in Front) muſt be put on, and cover'd with Glaſſes; after which it ſhould remain three or four Days, to let the Steam of the Bed paſs off, before you put the Plants therein; obſerving every Day to raiſe the Glaſſes either with Bricks or Stones, to give Vent for the riſing Steam to paſs off; then, when you find the Bed of a fine moderate Temperature for Heat, you ſhould, with a Trowel, or ſome other Inſtrument, take up the Plants as carefully as poſſible, to preſerve ſome Earth to the Roots, and plant them into the Hot-bed in Rows, about a Foot aſunder; and the Plants ſhould be ſet about an Inch and an half, or two Inches, diſtant from each other in the Rows; obſerving to water and ſhade them until they have taken Root: after which you muſt be careful to give them Air, at all times when the Seaſon is favourable; otherwiſe they will draw up very weak, and be ſubject to grow mouldy, and decay. You ſhould alſo draw the Earth up to the Shanks of the Plants, as they advance in Height; and keep them always clear from Weeds: the Water they ſhould have, muſt be given them ſparingly; for if they are too much water'd, it will cauſe them to grow too rank, and ſometimes rot off the Plants at their Shanks, juſt above-ground. When the Weather is very hot, you ſhould cover the Glaſſes with Mats in the Heat of the Day, to ſcreen them from the Violence of the Sun, which is then too great for them, cauſing their Leaves to flag, and their Bloſſoms to fall off without producing Pods; as will alſo the keeping of the Glaſſes too cloſe at that Seaſon. But when the Plants begin to fruit, they ſhould be water'd oftener, and in greater Plenty, than before; for by that time the Plants will have nearly done growing, and the often refreſhing them will occaſion their producing a greater Plenty of Fruit.

The Sort of Pea which is always uſed for this Purpoſe, is the Dwarf; for all the other Sorts ramble too much to be kept in Frames: the Reaſon for ſowing them in the common Ground, and afterward tranſplanting them on an Hot-bed, is alſo to check their Growth, and cauſe them to bear in leſs Compaſs; for if the Seeds were ſown upon an Hot-bed, and the Plants continued thereon, they would produce ſuch luxuriant Plants as not to be contained in the Frames, and would bear but little Fruit.

The next Sort of Pea, which is ſown to ſucceed thoſe on the Hot-bed, is the Hotſpur, of which there are reckon'd three or four Sorts; as the *Charlton* Hotſpur, the Maſter's Hotſpur, the *Reading* Hotſpur, and ſome others; which are very little differing from each other, except in their early Bearing, for which the *Charlton* Hotſpur is chiefly preferred; though, if either of theſe Sorts are cultivated in the ſame Place for three or four Years, they are apt to degenerate, and be later in Fruiting: for which Reaſon, moſt curious Perſons procure their Seeds annually from ſome diſtant Place; and in the Choice of theſe Seeds, if they could be obtained from a colder Situation, and a poorer Soil, than that in which they are to be ſown, it will be much better than on the contrary, and they will come earlier in the Spring.

Theſe muſt alſo be ſown on warm Borders, toward the Latter-end of *October*; and when the Plants are come up, you ſhould draw the Earth up to their Shanks in the manner before directed; which ſhould be repeated as the Plants advance in Height (always obſerving to do it when the Ground is dry), which will greatly protect the Stems of the Plants againſt Froſt; and if the Winter ſhould prove very ſevere, it will be of great Service to the Plants to cover them with Peas-haulm, or ſome other light Covering; which ſhould be conſtantly taken off in mild Weather, and only ſuffer'd to remain on during the Continuance of the Froſt: for if they are kept too cloſe, they will be drawn very weak and tender, and thereby be liable to be deſtroy'd with the leaſt Inclemency of the Seaſon.

In the Spring you muſt carefully clear them from Weeds, and draw ſome freſh Earth up to their Stems; but do not raiſe it too high to the Plants, leſt, by burying their Leaves, you ſhould rot their Stems; as is ſometimes the Caſe, eſpecially in wet Seaſons. You ſhould alſo obſerve to keep them clear from Vermin; which, if permitted to remain amongſt the Plants, will increaſe ſo plentifully, as to devour the greateſt Part of them. The chief of the Vermin which infeſt Peas, are the Slugs, which lie all the Day in the ſmall

Hollows of the Earth, near the Stems of the Plants, and in the Night-time come out, and make terrible Deſtruction of the Peas; and theſe chiefly abound in wet Soils, or where a Garden is neglected, and over-run with Weeds: therefore you ſhould make the Ground clear every Way round the Peas, to deſtroy their Harbours; and afterwards, in a fine mild Morning, very early, when theſe Vermin are got abroad from their Holes, you ſhould ſlake a Quantity of Lime, which ſhould be ſown hot over the Ground, pretty thick; which will deſtroy the Vermin, where-ever it happens to fall upon them; but will do very little Injury to the Peas, provided it be not ſcatter'd too thick upon them: this is the beſt Method I could ever find to deſtroy theſe troubleſome Vermin.

If this Crop of Peas improves, it will immediately ſucceed thoſe on the Hot-bed; but for fear this ſhould miſcarry, it will be proper to ſow two more Crops, at about a Fortnight's time from each other; ſo that there may be the more Chances to ſucceed: this will be ſufficient until the Spring of the Year, when you may ſow three more Crops of theſe Peas; one toward the Beginning of *January*, the other a Fortnight after, and the third at the End of *January*. Theſe two late Sowings will be ſufficient to continue the early Sort of Peas through the firſt Seaſon, and after this it will be proper to have ſome of the large Sort of Peas to ſucceed them: in order to which, you ſhould ſow ſome of the *Spaniſh* Morotto, which is a great Bearer, and an hardy Sort of Pea, about the middle of *February*, upon a clear open Spot of Ground: theſe muſt be ſown in Rows, about three Feet aſunder; and the Peas ſhould be dropp'd in the Drills about an Inch and an half Diſtance, covering them about two Inches deep with Earth; being very careful that none of them lie uncover'd, which will draw the Mice, Pigeons, or Rooks, to attack the whole Spot; and it often happens by this Neglect, that a whole Plantation is devour'd by theſe Creatures; whereas, when there are none of the Peas left in Sight, they do not ſo eaſily find them out.

About a Fortnight after this, you ſhould ſow another Spot, either of this Sort, or any other large Sort of Pea, to ſucceed thoſe; and then continue to repeat ſowing once a Fortnight, till the middle or Latter-end of *May*, ſome of theſe Kinds; only obſerving to allow the Marrow-fats, and other very large Sorts of Peas, at leaſt 3 Feet and an half or 4 Feet between Row and Row; and the Roſe-pea ſhould be allowed at leaſt 8 or 10 Inches Diſtance Plant from Plant, in the Rows; for theſe grow very large, and if they have not room allowed them, they will ſpoil each other by drawing up very tall, and will produce no Fruit.

When theſe Plants come up, the Earth ſhould be drawn up to their Shanks (as was before directed), and the Ground kept intirely clear from Weeds; and when the Plants are grown eight or ten Inches high, you ſhould ſtick ſome rough Boughs, or Bruſh-wood, into the Ground cloſe to the Peas, for them to ramp upon; which will ſupport them from trailing upon the Ground, which is very apt to rot the large-growing Sorts of Peas, eſpecially in wet Seaſons; beſides, by thus ſupporting them, the Air can freely paſs between them, which will preſerve the Bloſſoms from falling off before their time, and occaſion them to bear much better, than if permitted to lie upon the

Ground; and there will be room to paſs between the Rows to gather the Peas when they are ripe.

The Dwarf Sorts of Peas may be ſown much cloſer together, than thoſe before-mention'd; for theſe ſeldom riſe above a Foot high, and rarely ſpread above half a Foot in Width; ſo that theſe need not have more room than two Feet Row from Row, and not above an Inch aſunder in the Rows. Theſe will produce a good Quantity of Peas, provided the Seaſon be not over-dry; but they ſeldom continue long in bearing; ſo that they are not ſo proper to ſow for the main Crop, when a Quantity of Peas is expected for the Table; their chief Excellency being for Hot-beds, where they will produce a greater Quantity of Peas (provided they are well manag'd) than if expos'd to the open Air, where the Heat of the Sun ſoon dries them up.

The Sickle-pea is much more common in *Holland* than in *England*, it being the Sort moſtly cultivated in that Country; but in *England* they are only propagated by curious Gentlemen for their own Table, and are rarely brought into the Markets. This Sort the Birds are very fond of; and if they are not prevented, many times deſtroy the whole Crop. This ſhould be planted in Rows, about two Feet and an half aſunder; and be managed as hath been directed for the other Sorts.

Although I have directed the ſowing of the large Sorts of Peas for the great Crop, yet theſe are not ſo ſweet as the early Hotſpur Peas; therefore it will alſo be proper to continue a Succeſſion of thoſe Sorts through the Seaſon, in ſmall Quantities, to ſupply the beſt Table; which may be done, by ſowing ſome every Week: but all thoſe which are ſown late in the Seaſon, ſhould have a ſtrong moiſt Soil; for in hot light Land they will burn up, and come to nothing.

The large-growing Sorts may be cultivated for the common Uſe of the Family; becauſe theſe will produce in greater Quantities than the other, and will endure the Drought better: but the early Kinds are by far the ſweeter taſted Peas.

The beſt of all the large Kinds is the Marrow-fat; which, if gathered young, is a well-taſted Pea; and this will continue good through the Month of *Auguſt*, if planted on a ſtrong Soil.

The Grey, and other large Winter-peas, are ſeldom cultivated in Gardens, becauſe they require a great deal of room; but are uſually ſown in Fields, in moſt Parts of *England*. The beſt time for ſowing of theſe is about the Beginning of *March*, when the Weather is pretty dry; for if they are put into the Ground in a very wet Seaſon, they are apt to rot, eſpecially if the Ground be cold: theſe ſhould be allowed at leaſt three Feet Diſtance Row from Row, and muſt be ſown very thin in the Rows; for if they are ſown too thick, the Haulm will ſpread ſo as to fill the Ground, and ramble over each other; which will cauſe the Plants to rot, and prevent their Bearing.

The common White Pea will do beſt on light ſandy Land, or on a rich looſe Soil. The uſual Method of ſowing theſe Peas is with a broad Caſt, and ſo harrow them in: but it is a much better way to ſow them in Drills, about two Feet and an half aſunder; for half the Quantity of Seed will do for an Acre; and being ſet regularly, the Ground may be ſtirr'd with an Hoe-plough to deſtroy the Weeds, and earth up the Peas, which will greatly improve them; and theſe Peas may be much eaſier cut in Autumn, when they are ripe. The uſual time for ſowing of theſe Peas is about the Latter-end of *March*, or the Beginning of *April*, on warm Land; but on cold Ground they ſhould be ſown a Fortnight or three Weeks later. In the common way of ſowing, they allow three Buſhels or more to an Acre; but if they are drilled, one Buſhel and an half will be full enough.

The Green and Maple Rouncivals require a ſtronger Soil than the White, and ſhould be ſown a little later in the Spring; alſo the Drills ſhould be made at a greater Diſtance from each other; for as theſe are apt to grow rank, eſpecially in a wet Seaſon, they ſhould be ſet in Rows three Feet aſunder; and the Ground between the Rows ſhould be ſtirr'd two or three times with an Hoe-plough; which will not only deſtroy the Weeds, but, by earthing up the Peas, will greatly improve them; and alſo render the Ground better, to receive whatever Crop is put on it the following Seaſon.

The Grey Peas thrive beſt on a ſtrong clayey Land: theſe are commonly ſown under Furrows; but by this Method they are always too thick, and do not come up regular: therefore all theſe rank-growing Plants ſhould be ſown in Drills, where the Seeds will be more equally ſcatter'd, and lodged at the ſame Depth in the Ground; whereas, in the common way, ſome of the Seeds lie twice as deep as others, and are not ſcatter'd at equal Diſtances. Theſe may be ſown toward the End of *February*, as they are much hardier than either of the former Sorts; but the Culture ſhould be the ſame.

The beſt Method to ſow theſe Peas is, to draw a Drill with an Hoe by a Line, about two Inches deep, and then ſcatter the Seeds therein; after which, with a Rake you may draw the Earth over them, whereby they will be equally cover'd; and this is a very quick Method for Gardens; but where they are ſown in Fields, they commonly make a ſhallow Furrow with the Plough, and ſcatter the Seeds therein, and then with an Harrow they cover them over again. After this, the great Trouble is, to keep them clear from Weeds, and draw the Earth up to the Plants: this, in ſuch Countries where Labour is dear, is a great Expence to do it by the Hand with an Hoe; but this may be eaſily effected with an Hoeing-plough, which may be drawn thro' between the Rows; which will intirely eradicate the Weeds, and, by ſtirring the Soil, render it mellow, and greatly promote the Growth of the Plants.

When any of theſe Sorts are intended for Seed, there ſhould be as many Rows of them left ungather'd, as may be thought neceſſary to furniſh a ſufficient Quantity of Seed; and when the Peas are in Flower, they ſhould be carefully look'd over, to draw out all thoſe Plants which are not of the right Sort; for there will always be ſome roguiſh Plants (as the Gardeners term them) in every Sort, which, if left to mix, will degenerate the Kind. Theſe muſt remain until their Pods are changed brown, and begin to ſplit, when you ſhould immediately gather them up, together with the Haulm; and, if you have not room to ſtack them up till Winter, you may threſh them out as ſoon as they are dry, and put them up in Sacks for Uſe: but you muſt be very careful not to let them remain too long abroad after they are ripe; for if Wet ſhould happen, it would rot them; and Heat, after a Shower of Rain, would cauſe their Pods to burſt, and caſt forth their

Seeds, ſo that the greateſt Part of them would be loſt; but, as I ſaid before, it is not adviſeable to continue ſowing of the ſame Seed longer than two Years, for the Reaſons there laid down; but rather to exchange their Seeds every Year, or two Years at leaſt, whereby you may always expect to have them prove right.

PISUM CORDATUM. *Vide* Corindum.

PITTONIA.

The *Characters* are;

It hath a globular bell-ſhaped Flower, conſiſting of one Leaf, which is cut into ſeveral Segments at the Brim; from whoſe Cup ariſes the Pointal, which afterward becomes a ſoft ſpherical Berry full of Juice, incloſing two Seeds, which are for the moſt part oblong.

The *Species* are;

1. Pittonia *arboreſcens chamædrifolia major. Plum. Nov. Gen.* Greater tree-like Pittonia, with a Germander-leaf.

2. Pittonia *arboreſcens chamædrifolia minor. Plum. Nov. Gen.* Smaller tree-like Pittonia, with a Germander-leaf.

3. Pittonia *humilis, anchuſæ foliis. Plum. Nov. Gen.* Dwarf Pittonia, with Alkanet-leaves.

4. Pittonia *ſcandens, baccis niveis, nigris maculis notatis. Plum. Nov. Gen.* Climbing Pittonia, with white Berries ſpotted with Black.

5. Pittonia *fruteſcens, folio carnoſo, hirſuto & obtuſo. Plum. Nov. Gen.* Shrubby Pittonia, with an hairy fleſhy obtuſe Leaf.

6. Pittonia *hirſutiſſima & ramoſiſſima, baccis albis. Plum. Nov. Gen.* The moſt hairy and branching Pittonia, with white Berries.

7. Pittonia *racemoſa, Nicotianæ foliis fœtidiſſimis. Plum. Nov. Gen.* The moſt ſtinking branching Pittonia, with Tobacco-leaves.

All theſe Plants are Natives of the warmeſt Parts of *America*, where the firſt Sort grows to the Height of twelve or fourteen Feet, and divides into many Branches, ſo as to form a ſmall Tree. The ſecond, fifth, and ſeventh Sorts grow to the Height of eight or nine Feet, and produce many Branches near their Roots, ſo as to form thick Buſhes.

They may all be propagated by Seeds, which ſhould be ſown early in the Spring, in Pots filled with freſh Earth, and plunged into an Hotbed of Tanners Bark; and when the Plants are come up, they may be treated after the ſame manner as hath been directed for the Perſea: with which Management theſe Plants will thrive very well, and in a few Years will produce their Flowers. Theſe are preſerved by thoſe Perſons who are curious in collecting rare Plants, though there is no great Beauty in their Flowers; however, as they are ever-green, they make a Diverſity amongſt other Exotic Plants in the Stove in the Winter-ſeaſon.

PLANTAGO, The Plantain.

There are ſeveral Species of this, which are diſtinguiſh'd by Botaniſts, ſome of which are very troubleſome Weeds, in every Part of *England*, and the others are ſo in the Countries where they grow; ſo they are not cultivated in Gardens: therefore I ſhall not trouble the Reader with an Enumeration of them; but ſhall only obſerve, that the broad-leav'd Plantain, and the Ribwort Plantain, which are both uſed in Medicine, grow wild in almoſt every Part of *England*; ſo may be eaſily procur'd for Uſe.

PLANTAIN-TREE. *Vide* Muſa.

PLATANUS, The Plane-tree.

The *Characters* are;

It hath an amentaceous Flower, conſiſting of ſeveral ſlender Stamina, *which are collected into ſpherical lit-*

tle Balls, and are barren; but the Embryoes of the Fruit, which are produced on ſeparate Parts of the ſame Tree, are turgid, and afterward become large ſpherical Balls, containing many oblong Seeds, intermix'd with Down.

The *Species* are;

1. Platanus *Orientalis verus. Park. Theat.* The true Oriental Plane-tree.

2. Platanus *Occidentalis aut Virginienſis. Park. Theat.* The Weſtern or *Virginian* Plane-tree.

3. Platanus *Orientalis, aceris folio. T. Cor.* The Maple-leav'd Plane-tree.

The firſt of theſe Trees (though the firſt-known Sort in *Europe*) is leſs common than the ſecond; which has been introduc'd ſince the *Engliſh* ſettled in *Virginia*; which may be, in a great meaſure, owing to the latter Sort being much eaſier to propagate than the former: for every Cutting of this, if planted in a moiſt Soil, in the Autumn, or early in the Spring, will take Root, and in a few Years make very large Trees; whereas the firſt is only propagated from Seeds, or by Layers.

The third Sort, although by ſome ſuppoſed to be a diſtinct Species from either of the former, yet is no more but a ſeminal Variety of the firſt: for I have had many Plants, which came up from the Seeds of the firſt Sort, which ripen'd in the *Phyſic-garden*, which do moſt of them degenerate to this third Sort, which, in the manner of its Leaves, ſeems to be very different from either, and might reaſonably be ſuppos'd a diſtinct Sort, by thoſe who have not traced its Original.

Theſe Trees delight to grow on a moiſt rich Soil, on which they will arrive to a prodigious Size in a few Years, and during the Summer-ſeaſon afford a glorious Shade; their Leaves being of a prodigious Size, eſpecially on a good Soil, ſo that there is ſcarcely any Tree at preſent in *England*, which does afford ſo good a Shade. But the Backwardneſs of their coming out in Spring, together with their Leaves fading early in Autumn, has occaſion'd their not being ſo generally eſteem'd, as otherwiſe they would be.

The firſt Sort was brought out of the *Levant* to *Rome*, where it was cultivated with much Coſt and Induſtry: the greateſt Orators and Stateſmen among the *Romans* took great Pleaſure in their *Villa's*, which were ſurrounded with *Platanus*: and their Fondneſs for this Tree became ſo great, that we frequently read of their irrigating them with Wine inſtead of Water. *Pliny* affirms, that there is no Tree whatſoever which ſo well defends us from the Heat of the Sun in Summer, nor that admits it more kindly in Winter, the Branches being produc'd at a proportionable Diſtance to the Largeneſs of their Leaves (which is what holds through all the different Sorts of Trees yet known); ſo that when the Leaves are fallen in Winter, the Branches, growing at a great Diſtance, eaſily admit the Rays of the Sun.

This Tree was afterwards brought to *France*, where it was cultivated only by Perſons of the firſt Rank; and ſo much was the Shade of it priz'd, as that if any of the Natives did but put his Head under it, they exacted a Tribute from him.

It is generally ſuppos'd, that the Introduction of this Tree into *England* is owing to the great Lord Chancellor *Bacon*, who planted a noble Parcel of them at *Verulam*, which were there, very flouriſhing, a few Years ſince. But notwithſtanding its having been ſo long in

England, yet there are but very few large Trees to be ſeen of it at preſent; which may, perhaps, be owing to the great Eſteem the Perſons of the laſt Age had for the Lime, which being much eaſier to propagate, and of quicker Growth during the three or four firſt Years, than the Plane-tree, thereby it became the moſt common Tree for Planting of Avenues, and ſhady Walks near Habitations, in *England*. But ſince the Defects of that Tree have been more generally diſcover'd, the Elm has had the Preference, and is the moſt commonly planted for ſuch Purpoſes.

However, notwithſtanding what has been ſaid of the Plane-tree, of its Backwardneſs in coming out in the Spring, and the ſudden Decay of its Leaves in Autumn; yet, for the goodly Appearance, and great Magnitude to which it will grow, it deſerves a Place in large Plantations, or ſhady Receſſes near Habitations, eſpecially if the Plantation be deſigned on a moiſt Soil, or near Rivulets of Water; in which Places this Tree will arrive to a prodigious Size.

We read of one of theſe Trees, which was growing at a *Villa* of the Emperor *Caligula*, whoſe Trunk was ſo large, as, when hollow'd, to make a Room therein, capacious enough to entertain ten or twelve Perſons at a Repaſt, and for their Servitors to wait upon them. And there is mention made of one of theſe Trees, which was growing in the *Eaſtern* Country, which was of ſo great a Magnitude, that *Xerxes* made his Army (which conſiſted of ſeventeen hundred thouſand Men) halt, for ſome Days, to admire the Beauty and Procerity of this Tree; and became ſo fond of it, as to take his own, his Concubines, and all the great Perſons Jewels to cover it; and was ſo much enamour'd with it, that for ſome Days, neither the Concern of his grand Expedition, nor Intereſt, nor Honour, nor the neceſſary Motion of his prodigious Army, could diſſuade him from it: he ſtiled it, *His Miſtreſs, His Minion, His Goddeſs:* and when he was obliged to part with it, he caus'd a Figure of it to be ſtamp'd on a Gold Medal, which he continually wore about him.

And ſuch was the Eſteem which the People of *Aſia* had for this Tree, that where-ever they erected any ſumptuous Buildings, the Porticoes which open'd to the Air, terminated in Groves of theſe Trees.

The *Eaſtern* Plane-tree is propagated either from Seeds, or by Layers, the latter of which is generally practiſed in *England*; though the Plants thus rais'd ſeldom make ſo large ſtrait Trees, as thoſe which are produc'd from Seeds: but it has been generally thought, that the Seeds of this Tree were not productive, becauſe they have not been ſown at a proper Seaſon, nor managed in a right Manner; for I have had thouſands of the young Plants ſpring up from the Seeds of a large Tree, which ſcatter'd upon the Ground in a moiſt Place; and I ſince find, that if theſe Seeds are ſown, ſoon after they are ripe, in a moiſt ſhady Situation, they will riſe extremely well; and the Plants, thus obtain'd, will make a conſiderable Progreſs after the ſecond Year, being much hardier, and leſs liable to loſe their Tops in Winter, than thoſe which are propagated by Layers. And ſince the Seeds of this Tree ripen well in *England*, they may be propagated in as great Plenty as any other Foreſt-tree.

The *Virginian* Plane-tree will grow extemely well from Cuttings, if they are planted the Beginning of *October*, upon a moiſt Soil; and, if they are water'd in dry Weather, will make a prodigious Progreſs: ſo that in a few Years from the Planting, they will afford noble Trees for planting of Avenues, and other ſhady Walks; and their Trunks are perfectly ſtrait, growing nearly of the ſame Size to a conſiderable Height, there being the leaſt Difference in the Girt of this Tree, for ſeveral Yards upwards, of any other Sort of Tree whatſoever. The Honourable *Paul Dudley*, Eſq; in a Letter to the *Royal Society*, mentions one of theſe Trees, which he obſerv'd in *New-England*, whoſe Girt was nine Yards, and held its Bigneſs a great Way up; which Tree, when cut down, made twenty-two Cords of Wood. He alſo ſays, in the ſame Letter, That he had propagated many of theſe Trees by cutting off Sticks of five or ſix Feet long, and ſetting them a Foot deep into the Ground in the Spring of the Year, when the Seaſon was wet; and that they always thrive beſt in a moiſt Soil.

The Leaves of this Sort are larger, and leſs divided, than thoſe of the Oriental Plane-tree; and the Tree grows much faſter, and is hardier; and being thus eaſily propagated, is now the moſt common in *England*.

The Maple-leav'd Plane-tree hath its Leaves leſs divided than the firſt, but more than the ſecond Sort; ſo that it is a middle Kind between both: though, as I before ſaid, it comes originally from the Eaſtern Sort.

This is propagated very eaſily by Layers, every Twig of which will take Root, if they are but cover'd with Earth; and when tranſplanted out in a moiſt Soil, will grow equally faſt with the *Virginian* Kind. But whether this will take from Cuttings or not, I cannot ſay, having never made Trial of it; though from the Readineſs of the Branches taking Root, there is little Reaſon to doubt of it. The beſt time to tranſplant theſe Trees is in *March*; for if they are removed in Winter, and the Seaſon ſhould prove very ſevere, the tender Shoots are often kill'd by the Froſt.

PLINIA.

The *Characters* are;

It hath a bell-ſhaped Flower conſiſting of one Leaf, which is divided into five Segments at the Brim; from whoſe Cup riſes the Pointal, which afterward becomes a globular ſoft chanell'd Fruit, in which is included one Seed of the ſame Form.

We know but one *Species* of this Plant; which is,

PLINIA *fructu croceo odorato. Plum. Nov. Gen.* Plinia with a ſweet-ſcented ſaffron-colour'd Fruit.

This Plant was diſcover'd by Father *Plumier* in the *Weſt-Indies*, who gave it this Name, in Honour to *Pliny* the famous *Natural Hiſtorian*.

It grows in ſeveral Places in the warmer Parts of *America*, from whence the Seeds have been ſent to *Europe*. Theſe Seeds muſt be ſown in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark; obſerving to moiſten the Earth with Water whenever it appears dry, as alſo to preſerve a moderate Temperature of Heat in the Bed; ſo that if the Nights ſhould prove cold, the Glaſſes of the Hot-bed ſhould be every Night cover'd with Mats; and in the middle of the Day the Glaſſes may be raiſed to admit freſh Air, when the Weather is warm. Theſe Seeds will ſometimes remain long in the Ground before the Plants appear; and whenever it ſo happens, the Pots muſt be conſtantly kept clear from Weeds, and duly watered: and when the Plants come up, they ſhould be tranſplanted into Pots, and may be managed as is directed for the Pittonia.

PLUMBAGO, Leadwort.

The *Characters* are;

The Flower conſiſts of one Leaf, which is ſhap'd like a Funnel, and cut into ſeveral Segments at the Top; out of whoſe fiſtulous Flower-cup riſes the Pointal, which afterward becomes one oblong Seed, for the moſt part ſharp-pointed, which ripens in the Flower-cup.

The *Species* are;

1. Plumbago *quorundam. Cluſ. Hiſt.* Leadwort, or Toothwort.

2. Plumbago *flore albo. Inſt. R. H.* Leadwort with a white Flower.

3. Plumbago *Orientalis, lapathi folio, flore minori albido. Tourn. Cor. Eaſtern* Leadwort, with a Dock-leaf, and a ſmaller whitiſh Flower.

4. Plumbago *Americana ſcandens aculeata, betæ folio minori. Plum. Cat.* Prickly climbing *American* Leadwort, with a leſſer Beet-leaf.

5. Plumbago *Americana, betæ folio ampliori. Plum. American* Leadwort, with a broad Beet-leaf.

The firſt of theſe Sorts grows about *Naples*, in *Sicily*, and the Southern Parts of *France*; but is hardy enough to endure the Cold of our Climate in the open Ground, provided it be planted in a warm dry Soil. This is propagated by parting of the Roots in the Spring before they ſhoot: in doing of which, you ſhould be very careful to preſerve an Head to each Slip, otherwiſe they will not grow. They ſhould be planted in a warm Situation, and a dry Soil, about two Feet aſunder, and water'd until they take Root; after which they will require no farther Care, but to clear them from Weeds, and ſupport their Branches from being broken by the Wind. They commonly riſe about three Feet high; but, unleſs the Autumn be very favourable, they ſeldom flower in this Country. The Flowers of this Sort are blue, and the Root of it is ſometimes us'd in Medicine.

The ſecond Sort differs little from the firſt, except in the Colour of the Flowers, thoſe of this being white; and the Plants grow taller, and flower later in the Year. This is as hardy as the firſt, and may be treated in the ſame way.

The third Sort was diſcover'd by Dr. *Tournefort* in the *Levant*, from whence he ſent the Seeds into *Europe*. This Sort hath much broader Leaves than either of the former, and the Plant is of humbler Growth. It may be treated in the ſame manner as the two former Sorts, and will live in the full Ground, provided it is planted in a dry Soil, and a ſhelter'd Situation.

The fourth and fifth Sorts are tender; therefore will not live in *England* in the open Air. Theſe grow in plenty in the *Britiſh* Iſlands of *America*, from whence the Seeds were ſent me by the late Dr. *William Houſtoun*. The fifth Sort was brought from *Ceylon* to ſome curious Gardens in *Holland*; ſo that it is probably an Inhabitant of moſt of the hot Countries.

Theſe Plants may be propagated by Seeds, which ſhould be ſown on an Hot-bed in the Spring; and when the Plants are fit to remove, they ſhould be each planted into a ſeparate Pot, and plunged into a freſh Hot-bed, to bring them forward; and afterward ſhould be treated in the ſame manner as other tender Exotic Plants. For although theſe Plants will live in the open Air in the Summer-ſeaſon; yet they will not thrive well, nor produce their

Flowers; whereas, if they are kept in the Stove in a moderate Warmth, they will flower, and produce good Seeds every Year. Theſe two Sorts may alſo be propagated by parting of their Roots in *April*; but as they produce good Seeds, they are commonly propagated by thoſe; for the ſeedling Plants flower better than the Off-ſets. They flower moſt Part of Winter in the Stove, and the Seeds are ripe in the Spring.

PLUM-TREE. *Vide* Prunus.

PLUMERIA, The Jaſmine-tree, *vulgo*.

The *Characters* are;

It hath a funnel-ſhap'd Flower, conſiſting of one Leaf, which is cut into ſeveral Segments at the Brim, out of whoſe Cup ariſes the Pointal, which afterward becomes the Fruit or Pod; which, for the moſt part, grow double, and open lengthwiſe; diſcovering the Seeds, which are oblong, and have a Border round them; theſe are ranged over each other, like Slates on an Houſe; and are faſtened to the Placenta.

The *Species* are;

1. PLUMERIA *flore roſeo odoratiſſimo. Inſt. R. H.* Plumeria with a roſe-colour'd ſweet-ſcented Flower, commonly call'd, in the *Weſt-Indies*, Red Jaſmine.

2. PLUMERIA *flore majore odorato & incarnato.* Plumeria with a larger ſweet-ſcented and incarnate Flower, called, in the *Weſt-Indies*, The Japan-tree.

3. PLUMERIA *flore niveo, foliis longis anguſtis & acuminatis. Inſt. R. H.* Plumeria with a ſnowy Flower, and long narrow-pointed Leaves.

4. PLUMERIA *flore niveo, foliis brevioribus & obtuſis. Inſt. R. H.* Plumeria with a ſnowy Flower, and ſhorter blunt Leaves.

5. PLUMERIA *foliis longiſſimis, minus ſucculentibus, flore pallido. Houſt.* Plumeria with very long and leſs ſucculent Leaves, and a pale Flower.

6. PLUMERIA *folio latiore obtuſo, flore luteo minore.* Plumeria with a broad obtuſe Leaf, and a ſmaller yellow Flower.

This Name was given to this beautiful Genus of Plants, by Dr. *Tournefort*, in Honour to Father *Plumier*, who was Botaniſt to the late King of *France*, and a long time in *America*, ſearching after new Plants; and who has publiſhed a Catalogue of the Plants he diſcovered, with the new Genus's he conſtituted; and two Volumes in *Folio*, with Figures and Deſcriptions of many of the Plants.

Theſe Plants grow wild in the *Spaniſh Weſt-Indies*, from whence ſome of the moſt beautiful Kinds were brought into the *Engliſh* Settlements in *America*, and are cultivated in their Gardens for Ornament. The firſt Sort here mentioned is the moſt common Kind, which is preſerv'd in the Gardens of the Inhabitants of *Jamaica* and *Barbados*. The Flowers of this Kind nearly reſemble thoſe of the red Oleander; but are larger, and have an agreeable Odour. Theſe are produced in ſmall Bunches, at the Extremity of the Shoots, and generally appear in *July* and *Auguſt*, in this Climate; but in the *Weſt-Indies* they flower a great Part of the Year.

The ſecond Sort I receiv'd from the Iſland of *St. Chriſtophers*, by the Name of *Japan-tree*: this Sort is very rare in the *Engliſh* Settlements at preſent, having been but lately introduc'd from the *Spaniſh Weſt-Indies*. It is in Leaf and Stem very like the firſt; but the Flowers of this are of a paler Colour, and are produced in much larger Bunches. It is very common to have upward of twenty of theſe Flowers open in one Bunch, and a Number to ſucceed theſe as they decay, ſo that the Bunches have continued in Beauty upward of two Months; during which time they make a moſt beautiful Appearance in the Stove, and have a very agreeable Flavour.

The third Sort grows plentifully at *Campechy*, from whence the late Dr. *Houſtoun* ſent the Seeds. He alſo obſerved ſome Plants of this Kind at *Jamaica*. The ſixth Sort is alſo pretty common in both thoſe Places. Theſe are not near ſo beautiful as the two former Sorts, their Flowers being ſmaller, and produc'd in leſſer Bunches, and are moreover of ſhorter Duration. But for the Beauty of their Stems and Leaves, and for the ſake of Variety, they deſerve room in every curious Collection of Plants.

The fourth and fifth Sorts were diſcover'd by Dr. *Houſtoun*, growing in great Plenty near *Carthagena* in the *Spaniſh Weſt-Indies*, from whence he ſent their Seeds to *England*. The fourth Sort produces ſmall white Flowers, reſembling thoſe of the third; ſo is leſs valuable than the two firſt. The fifth Sort produces as large Flowers as the firſt; but they are of a pale-red Colour, and ſmell very ſweet. The Leaves of this Sort are ſometimes ten Inches, or a Foot, in Length, and about three Inches over in their broadeſt Part. Theſe are not near ſo thick, or full of Juice, as thoſe of the other Sorts: nor are they ſo deeply veined; but being of a bright ſhining-green Colour, they make an agreeable Variety amongſt other tender Exotic Plants in the Stove.

All theſe Plants may by propagated by Seeds, which ſhould be ſown in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark; and when the Plants are come up about two Inches high, they ſhould be tranſplanted into ſeparate ſmall Pots filled with light ſandy Earth, and plunged into the Hot-bed again; obſerving to ſhade them from the Heat of the Sun in the Middle of the Day, until they have taken Root: but they muſt not have much Water; for as all the Sorts are very ſucculent, being full of a milky Juice, ſomewhat like the Euphorbiums, Moiſture will cauſe them to rot. In hot Weather the Plants ſhould have a pretty large Share of freſh Air admitted to them, by raiſing the Glaſſes of the Hot-bed every Day, in proportion to the Warmth of the Seaſon. Toward *Michaelmas*, when the Nights begin to be cold, the Plants ſhould be removed into the Stove, and plunged into the Bark-bed; where they muſt remain during the Winter. As theſe Plants all caſt their Leaves in the Middle of Winter, and continue deſtitute of them till about the Beginning of *May*, ſo, during that time, they ſhould be water'd very ſparingly; becauſe they are in more Danger of rotting, while they are in a leſs active State, by too much Moiſture, than when they are furniſh'd with Leaves, through which the Moiſture is more freely perſpired.

All theſe Sorts are too tender to thrive in the open Air of this Country, in the Summer-ſeaſon; therefore ſhould be conſtantly preſerved in the Stove, where, in warm Weather, they muſt have a large Share of free Air; but in cold Weather they muſt be kept very warm. While they are young, it will be proper to continue them in the Bark-bed; but when they have obtained Strength, they may be placed in the dry Stove, where they will thrive very well, provided they are kept in a moderate Temperature of Heat, and have not too much Water.

Theſe Plants may alſo be propagated by Cuttings, which ſhould be taken from the old Plants a Month before they are planted; during which time, they ſhould be laid on the Flues in the Stove, that the Part which joined to the old Plant may be thoroughly healed, otherwiſe they will rot. Theſe Cuttings ſhould be planted in ſmall Pots filled with light ſandy Earth, and plunged into a moderate Hot-bed of Tanners Bark; obſerving to ſhade them in the Heat of the Day from the Sun, and refreſh them every third or fourth Day with Water; but it muſt be given to them ſparingly each time. If the Cuttings ſucceed, they will have taken Root in about two Months; when they ſhould have a larger Share of Air, to harden them by degrees to bear the Sun and Air; and afterward may be treated as the old Plants.

The milky Juice of theſe Plants is very cauſtic, and reckon'd very poiſonous. In cutting off any of the Branches of the Plants, if the Knife be not immediately clean'd, the Juice will corrode it, and turn the Blade almoſt black in a very little time, ſo as not to be cleaned off again; and if dropped on Linen, will cauſe it to waſh in Holes, equal to *Aqua fortis*.

POINCIANA, *Barbados* Flower-fence, or *Spaniſh* Carnations.

The *Characters* are;

The Flower conſiſts of five Leaves, which are plac'd in a circular Order; in the Centre of which ariſe ten crooked Stamina: *the Pointal, which ariſes from a quinquefid Flower-cup, becomes a long, broad, flat Pod, opening into two Parts, and fill'd with broad, flat, roundiſh Seeds, each of which is lodg'd in a ſeparate Cell, which are divided by a thin Partition.*

The *Species* are;

1. POINCIANA *flore pulcherrimo. Tourn. Barbados* Flower-fence, with a fair Flower.
2. POINCIANA *flore luteo. Houſt. Barbados* Flower-fence, with a yellow Flower.
3. POINCIANA *flore rubente. Houſt.* Flower-fence with a rediſh Flower.
4. POINCIANA *ſpinoſa, vulgo* Tara. *Feuil.* Prickly Flower-fence, commonly called *Tara*.

The firſt Sort is very common in the *Caribbee* Iſlands, where it is planted for a Fence to divide Fields; and is greatly eſteem'd for the Beauty of its Flowers, which are produced on long Spikes in vaſt Quantities. The Leaves of this Plant are alſo us'd inſtead of Sena, to purge withal.

This was carry'd from *Cape Verd* Iſlands to *Barbados*, as is related by *Ligon*, and hath ſince been diſperſed thro' the other Iſlands. It grows in thoſe Countries to be ten or twelve Feet high, and the Stem is often as large as the Small of a Man's Leg, and the Wood is very hard; from whence it hath obtain'd the Name of Ebony in ſome Places.

The Seeds of this Plant are annually brought over in plenty from the *Weſt-Indies*, which, if ſown upon an Hot-bed, will riſe eaſily: and when the Plants are come up, they ſhould be tranſplanted into ſmall Pots, and plung'd into an Hot-bed of Tanners Bark, obſerving to ſhade them until they have taken Root; after which you muſt give them Air in proportion to the Warmth of the Seaſon, and they muſt be frequently refreſh'd with Water. When the Plants have fill'd the Pots with their Roots, they ſhould be taken out, and plac'd into larger ones, that they may have room to grow. If Care be taken to water and ſhift them as often as is neceſſary, they will grow to be three Feet high the firſt Seaſon. At *Michaelmas* the Pots ſhould be plung'd into a freſh Hot-bed of Tanners Bark, in the Stove; which ſhould be kept to the Anana's Heat, mark'd on the Botanical Thermometers, and frequently refreſh'd with Water; but you muſt never give them large Quantities, which is very injurious to theſe Plants at that Seaſon. The Earth which theſe Plants ſhould be planted in, muſt be freſh, light, and ſandy (but not over-rich); in which they will ſtand the Winter better than if planted in a ſtronger Soil.

With this Management I have rais'd ſeveral Plants to be eighteen Feet high; ſome of which I have preſerv'd five or ſix Years, which have produc'd Flowers in the Depth of Winter, when they made a fine Appearance in the Stove.

The ſecond and third Sorts were diſcover'd by Dr. *William Houſtoun* at *Campechy*, where he found them growing in plenty. Theſe do not differ from the firſt in the outward Face of the Plants, but only in the Colour of their Flowers; one of theſe having yellow, and the other red Flowers; whereas thoſe of the firſt are red and yellow variegated.

The fourth Sort was diſcover'd by *Pere Feuillée*, growing plentifully in the Vallies of *Lima*. The Flowers of this Kind are ſmaller than thoſe of the other Sorts, and are of a greeniſh-yellow Colour, ſo that they are not near ſo beautiful. The Seed-pods of this Sort are uſed by the Dyers in the *Spaniſh Weſt-Indies*, for dyeing of Black; and they are alſo uſed for making of Ink: the Infuſion of theſe Pods with Galls affords the moſt beautiful black Ink in the World.

Theſe Sorts are propagated by Seeds, in the ſame manner as the firſt; and the Plants muſt be treated in the ſame way, being all of them very tender Plants: and although they are ſome Years before they produce their Flowers, yet the regular Beauty of their branching winged Leaves renders them worthy of a Place in every good Stove: and when they flower, they are the greateſt Ornaments in a Collection of rare Plants.

POKE VIRGINIAN. *Vide* Phytolacca.

POLEMONIUM, Greek Valerian, or Jacob's Ladder.

The *Characters* are;

The Flower conſiſts of one Leaf, which is deeply divided into five Parts, and is wheel-ſhap'd: the Pointal, which riſes from the Flower-cup, afterward becomes a roundiſh Fruit, divided into three Cells, which are fill'd with oblong Seeds: to which ſhould be added, The Leaves are pinnated.

The *Species* are;

1. Polemonium *vulgare cæruleum. Tourn.* Greek Valerian, with a blue Flower.

2. Polemonium *vulgare album. Tourn.* Greek Valerian, with a white Flower.

3. Polemonium *vulgare, flore variegato. Tourn.* Greek Valerian, with a ſtrip'd Flower.

4. Polemonium *vulgare, foliis eleganter variegatis. Boerh. Ind.* Greek Valerian, with beautiful ſtriped Leaves.

The two firſt Species are very common in many *Engliſh* Gardens, where they are cultivated for the Beauty of their Flowers. They have alſo been found wild in *Carleton Beck*, and about *Malham Cave* near *Craven*. The Sort with variegated

Flowers, as alſo that with ſtrip'd Leaves, are Varieties which have been obtain'd from the former.

Theſe Plants are eaſily propagated by ſowing their Seeds in the Spring upon a Bed of light Earth; and when they are come up pretty ſtrong, they ſhould be prick'd out into another Bed of the ſame light Earth, about three Inches aſunder; obſerving to ſhade and water them until they have taken Root, after which they will require no farther Care but to keep them clear from Weeds, until *Michaelmas*; at which time they muſt be tranſplanted into the Borders of the Flower-garden, where, being intermix'd with different Sorts of Flowers, they will make a beautiful Appearance. Theſe produce their Flowers in *May* and *June*, and their Seeds ripen in *Auguſt*.

The variegated Kinds are preſerved by parting of their Roots; becauſe the Plants raiſed from Seeds would be ſubject to degenerate, and become plain. The beſt time to part them is about *Michaelmas*, that they may take good Root before the cold Weather prevents them. Theſe ſhould have a freſh light Soil; but if it be too rich, their Roots will rot in Winter, and the Stripes will go off.

POLYANTHES, The Tuberoſe.

The *Characters* are;

The Flower hath no Empalement, and is funnel-ſhaped, of one Leaf, having a long curved Tube, and ſpread open at the Top, where it is divided into ſix Parts: in the Bottom of the Flower is ſituated the roundiſh Pointal, attended by ſix thick Stamina, *which are obtuſe: the Pointal afterward becomes a roundiſh triangular Seed-veſſel, having three Cells, which are full of roundiſh Seeds.*

The *Species* are;

1. Polyanthes *floribus alternis. Lin. Hort. Cliff.* The Tuberoſe.

2. Polyanthes *floribus alternis. flore pleno.* The double Tuberoſe.

3. Polyanthes *floribus umbellatis. Lin. Vir.* The *African* blue umbellated Hyacinth.

The firſt Sort has been long cultivated in the *Engliſh* Gardens for the exceeding Beauty and Fragrancy of its Flowers: the Roots of this Sort are annually brought from *Genoa*, by the Perſons who import Orange-trees: for as theſe Roots are too tender to thrive in the full Ground in *England*, there are few Perſons who care to take the Trouble of nurſing up their Off-ſets, till they become blowing Roots; becauſe it will be two or three Years before they arrive to a proper Size for producing Flowers: and as they muſt be protected from the Froſt in Winter, the Trouble and Expence of Covers is greater than the Roots are worth; for they are generally ſold pretty reaſonable, by thoſe who import them from *Italy*.

The ſecond Sort is a Variety of the firſt, which was obtained from the Seed by Monſieur *Le Cour*, of *Leyden* in *Holland*, who for many Years was ſo tenacious of parting with any of the Roots, even after he had propagated them in ſuch Plenty, as to have more than he could plant, as to cauſe them to be cut in Pieces, that he might have the Vanity to boaſt of being the only Perſon who was poſſeſſed of this Flower: but of late Years the Roots have been ſpread into many Parts; and as there is no other Method to propagate this, but by the Off-ſets, moſt People who have had of this Sort are careful to multiply and increaſe it; which is done by planting the Off-ſets upon a moderate Hot-bed, early in *March*, and covering the Bed in cold Weather with Mats or Straw; and in Summer they muſt have plenty of Water in dry Weather: in this Bed the Roots may remain till the Leaves decay in Autumn; but if there ſhould happen any Froſt before that time, the Bed ſhould be covered to guard the Roots from the Froſt, becauſe it will deſtroy them if the Froſt enters ſo low as to reach the Roots: and where there is due Care taken to ſcreen them from Froſt, and too much Wet, it will be the beſt Way to let the Roots remain in the Bed till the End of *November*, or the Beginning of *December*, provided hard Froſts do not ſet in ſooner; for the leſs time the Roots are out of the Ground, the ſtronger they will be, and the ſooner they will flower: when the Roots are taken up, they ſhould be cleaned from the Earth, and laid up in dry Sand, where they may be ſafe from Froſt and Wet; where they ſhould remain until the Seaſon for planting them again: this ſame Method ſhould be practiſed by thoſe who are deſirous to cultivate the ſingle Sort.

I ſhall next give Directions for the Management of thoſe Roots, which are annually brought from *Italy*: and firſt, in the Choice of the Roots, thoſe which are the largeſt and plumpeſt, if they are perfectly firm and ſound, are the beſt; and the fewer Off-ſets they have, the ſtronger they will flower: but the Under-part of the Roots ſhould be particularly examined, becauſe it is there that they firſt decay: after the Roots are choſen, before they are planted, the Off-ſets ſhould be taken off; for if theſe are left upon the Roots, they will draw away part of the Nouriſhment from the old Root, whereby the Flower-ſtems will be greatly weakened.

As theſe Roots commonly arrive in *England* in the Month of *February*, thoſe who are deſirous to have theſe early in Flower, ſhould make a moderate Hot-bed the Beginning of *March*, which ſhould have good rich Earth laid upon the Dung, about eight or nine Inches deep: this Bed ſhould be covered with a Frame; and when the Bed is in a proper Temperature for Warmth, the Roots ſhould be planted at about ſix Inches Diſtance from each other every Way. The upper-Part of the Root ſhould not be buried more than one Inch in the Ground: when the Roots are planted, there ſhould be but little Water given them, until they ſhoot above-ground; for too much Wet will rot them, when they are in an unactive State: but afterward they will require plenty of Water, eſpecially when the Seaſon is warm; when the Flower-ſtems begin to appear, the Bed ſhould have a large Share of Air given to it; otherwiſe the Stalks will draw up weak, and produce but few Flowers: for the more Air theſe Plants enjoy in good Weather, the ſtronger they will grow, and produce a greater Number of Flowers: therefore, toward the Beginning of *May*, the Frame may be quite taken off the Bed, and Hoops faſtened over it, to ſupport a Covering of Mats, which need not be laid over, but in the Night, or in very cold Weather; ſo that by enjoying the free open Air, their Stems will be large: and if they are well watered in dry Weather, their Flowers will be large, and a great Number on each Stem.

This firſt Planting will require more Care than thoſe which are deſign'd to come after them; for in order to have a Succeſſion of theſe Flowers, the Roots ſhould be planted at three different times; *viz.* the firſt the Beginning of *March*; the ſecond the Beginning of *April*; and the third at the End of that Month, or the Beginning of *May*: but theſe Beds will require a much leſs Quantity of Dung than the firſt, eſpecially that Bed which is the laſt made; for if there is but Warmth enough to put the Roots in Motion, it is as much as will be required: and this laſt Bed will need no Covering; for many times thoſe Roots which are planting in the full Ground at this Seaſon, will produce ſtrong Flowers in Autumn: but in order to ſecure their Flowering, it is always the beſt way to plant them on a gentle Hotbed. As to the ſecond Bed, that ſhould be arched over with Hoops, and covered with Mats every Night, and in bad Weather; otherwiſe the late Froſts, which frequently happen in *May*, will pinch them.

Theſe Plants may remain in the Beds until the Flowers are near expanded; at which time they may be carefully taken up, preſerving the Earth to their Roots, and planted in Pots, and then placed in the Shade for four or five Days: after which time the Pots may be removed into Halls, or other Apartments, where they will continue in Beauty a long time; and their fragrant Odour will perfume the Air of the Rooms where they are placed; and by having a Succeſſion of them, they may be continued from *Midſummer* to the End of *October*: but as the Stems of theſe Plants advance, there ſhould be ſome Sticks put down by each Root; to which the Stems ſhould be faſtened, to prevent their being broken by the Wind.

It is a common Practice with many People, to plant theſe Roots in Pots, and plunge the Pots into an Hotbed: but there is much more Trouble in raiſing them in this Method, than in that before directed; for if the Roots are not planted in very ſmall Pots, there will be a Neceſſity of making the Beds much larger, in order to contain a Quantity of the Roots: and if they are firſt planted in ſmall Pots, they ſhould be ſhaken out of theſe into Pots of a larger Size, when they begin to ſhoot out their Flower-ſtems; otherwiſe the Stalks will be weak, and produce but few Flowers: therefore I prefer the other Method, as there is no Danger in removing the Roots, if it is done with Care.

When the Roots are ſtrong, and properly managed, the Stems will riſe three or four Feet high; and each Stem will produce twenty Flowers or more: and in this the great Beauty of theſe Flowers conſiſts; for when there are but a few Flowers upon the Stalks, they will ſoon fade away, and muſt be frequently renewed; for the Flowers are produced in Spikes coming out alternately upon the Stalk, the lower Flowers opening firſt; and as theſe decay, thoſe above them open; ſo that in proportion to the Number of Flowers upon each Stalk, they continue in Beauty a longer or ſhorter time.

The Sort with double Flowers will require a little more Care, in order to have the Flowers fair; but this Care is chiefly at the time of Blowing; for the Flowers of this Sort will not open, if they are expoſed to the open Air; therefore when the Flowers are completely formed, and near opening, the Pots ſhould be placed in an airy Glaſs-caſe, or a Shelter of Glaſſes ſhould be prepared for them, that the Dews and Rains may not fall upon them; for that will cauſe the Flowers to rot away before they open; and the Heat of the Sun drawn thro' the Glaſſes will cauſe their Flowers to expand very fair. With this Management, I have had this Sort with very double Flowers extremely fair, and upward of twenty upon one Stem; ſo that they have made a beautiful Appearance: but where this has not been practiſed, I have rarely ſeen one of them in any Beauty.

The third Sort is a Native of the *Cape of Good Hope*, from whence the Seeds were brought to ſome curious Gardens in *Holland*, where the Plants were raiſed and multiplied, and have ſince been diſperſed into moſt of the curious Gardens in *Europe*: this Plant is well figured and deſcribed by Dr. *Commelin*, in the *Hortus Amſtelodamenſis*, by the Tittle of *Hyacinthus Africanus tuberoſus, flore cæruleo umbellato*: but Dr. *Linnæus* has removed this from the Genus of *Hyacinthus*, becauſe the Flowers of theſe Plants have an incurved Tube, and the *Apices* are inſerted in the upper Part; whereas the Flower of the *Hyacinth* is bell-ſhaped, and has three *Nectariums*, which are joined in the Centre.

The Roots of this Plant are compoſed of many thick fleſhy Tubers, ſomewhat in Shape like thoſe of the *Ranunculus*, but are much larger: the Leaves are long and flat, reſembling thoſe of Daffodil; but are of a dark-green Colour. Theſe remain green all the Year; but in Summer they are not ſo ſtrong and vigorous as in Winter, which is the Seaſon of their Growth: the Flowers are produced in an Umbel, upon the Top of a naked Stalk, which is about a Foot and an half high: theſe Flowers are ſhaped ſomewhat like thoſe of the Hyacinth, being large, and of a fine blue Colour: the Seaſon of this Plant's flowering, is about *Michaelmas*: but when the Plants are ſtrong, the Flowers will be in greater Quantity; ſo that they will continue in Beauty near two Months: and this being at a Seaſon when there is a Scarcity of Flowers, renders this the more valuable. Indeed, there are few Plants which are preſerved in the Green-houſe, that merit a Place more than this Plant; for where they are in plenty, they may be ſo managed, as to have a Succeſſion of them in Flower upward of three Months; and this in the Winter-ſeaſon, when they are placed in the Green-houſe.

This Plant is propagated by parting of the Roots; for the Seeds are ſeldom perfected in *England*: the beſt time for parting the Roots is about the End of *May*; at which time the Leaves are not in a growing State: but in the parting of the Roots, they muſt not be divided too ſmall, eſpecially if there is regard paid to their Flowering; for the ſmaller the Roots are, the weaker will be the Flowers; ſo that by increaſing the Number of Roots too faſt, they will not produce ſo many Flowers as they otherwiſe would do: theſe Roots muſt be planted in Pots filled with rich freſh Earth, and ſhould be placed in the Summer-ſeaſon in the open Air, in a ſheltered Situation, and not too much watered during that time; for as they are then in the moſt unactive State, much Wet often rots their Roots. In Autumn, when the Nights begin to be cold, the Pots ſhould be removed into the Green-houſe, and placed near the Windows, where they may have a large Share of Air; for if they are much crouded by other Plants, whereby the Air is excluded from them, the Flowers are ſubject to Mouldineſs, which will ſoon ſpoil their Beauty. During the Winter-ſeaſon the Plants muſt be frequently refreſhed with Water, eſpecially while they continue in Flower; but they muſt not have it in too great Quantities; for as the Roots are thick and fleſhy, much Moiſture will cauſe them to rot: theſe Plants do not require any artificial Heat in Winter; ſo may be preſerved in a good Green-houſe; or if they are placed in a dry airy Glaſs-caſe with Ficoides, and other hardy ſucculent Plants of the ſame Country, they will thrive and flower extremely well: and with this Management I have had the Seed-veſſels formed, which have grown to a conſiderable Size; but the long cold Nights, which then came on, cauſed the Air to be very damp, which occaſioned a Mouldineſs, that deſtroyed the Seeds: but I believe by removing the Plants into a moderate Stove, as ſoon as the Flowers are over, this might be prevented, and good Seeds may be obtained.

POLIUM, Poley-mountain.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, whoſe Stamina *ſupply the Place of the Creſt: the Beard, or Under-lip, is divided into five Segments, as the Germander: out of the Flower-cup riſes the Pointal, attended, as it were, by four Embryoes, which afterward become ſo many Seeds, ſhut in the Flower-cup: to theſe Marks muſt be added, That the Flowers are collected into an Head upon the Tops of the Stalks and Branches.*

The *Species* are;

1. Polium *montanum luteum. C. B. P.* Yellow Mountain-poley.

2. Polium *montanum album, C. B. P.* White Poley-mountain.

3. Polium *lavendulæ folio. C. B. P.* Poley-mountain with a narrower Lavender-leaf.

4. Polium *lavendulæ folio anguſtiori. C. B. P.* Poley-mountain with a narrower Lavender-leaf.

5. Polium *Pyrenaicum ſupinum, hederæ terreſtris folio. Tourn.* Creeping *Pyrenean* Poley-mountain, with a Ground-ivy-leaf.

6. Polium *maritimum erectum Monſpeliacum. C. B. P.* Upright Poley-mountain of *Montpelier.*

7. Polium *montanum luteum, ſerratis anguſtioribus incanis foliis. Barrel.* Yellow Poley-mountain, with narrow hoary ſerrated Leaves.

8. Polium *montanum alterum, foliis anguſtioribus, capitulis longioribus. C. B. P.* Another Mountain-poley, with narrower Leaves, and longer Heads.

9. Polium *montanum repens. C. B. P.* Creeping Mountain-poley.

10. Polium *maritimum ſupinum, Venetum. C. B. P.* Creeping maritime *Venetian* Mountain-poley.

11. Polium *Hiſpanicum, chamædryos folio, flore purpuraſcente. Inſt. R. H.* *Spaniſh* Mountain-poley, with a Germander-leaf, and a purpliſh Flower.

12. Polium *Luſitanicum ſupinum minus incanum, caulibus purpuraſcentibus, flore albo. Inſt. R. H.* Creeping leſs hoary *Portugal* Mountain-poley, with purpliſh Stalks, and a white Flower.

13. Polium *Hiſpanicum latifolium, capitulo breviori, purpuraſcente flore. Inſt. R. H.* Broad-leav'd *Spaniſh* Mountain-poley, with a ſhorter Head, and a purpliſh Flower.

14. Polium *Hiſpanicum maximum album. Inſt. R. H.* The largeſt white *Spaniſh* Mountain-poley.

15. Polium *Hiſpanicum maximum luteum. Inſt. R. H.* The greateſt yellow *Spaniſh* Mountain-poley.

16. Polium *Hiſpanicum maritimum fruteſcens, roriſmarini folio, flore rubro. Inſt. R. H.* Shrubby maritime *Spaniſh* Mountain-poley, with a Roſmary-leaf, and a red Flower.

17. Polium *Hiſpanicum ſupinum, flore flaveſcente. Inſt. R. H.* Creeping *Spaniſh* Poley-mountain, with a yellowiſh Flower.

18. Polium *Hiſpanicum, linariæ foliis brevioribus, flore albo. Inſt. R. H. Spaniſh* Poley-mountain, with ſhorter Toadflax-leaves, and a white Flower.

19. Polium *montanum gnaphaloides inciſum, flore rubro, & ſupinum. Barr. Icon.* Creeping Poley-mountain, reſembling Cudweed, with a red Flower.

20. Polium *Hiſpanicum luteum, majoranæ folio. Inſt. R. H.* Yellow *Spaniſh* Poley-mountain, with a Marjoram-leaf.

21. Polium *Hiſpanicum, ſerpylli folio, purpuraſcente flore. Inſt. R. H. Spaniſh* Poley-mountain, with a Mother-of-thyme-leaf, and a purpliſh Flower.

22. Polium *Hiſpanicum, thymi folio, purpuraſcente coma. Inſt. R. H. Spaniſh* Poley-mountain, with a Thyme-leaf, and purpliſh Top.

23. Polium *Creticum maritimum humifuſum. Tourn. Cor.* Trailing maritime Poley-mountain of *Crete.*

24. Polium *Smyrnæum, ſcordii folio. Tourn. Cor. Smyrna* Poley-mountain, with a Water-germander-leaf.

Theſe are all of them perennial Plants, except the third and fourth Sorts: theſe two ſeldom continue longer than two or three Years, ſo are propagated by Seeds; but the others, which are abiding Plants, are propagated by Cuttings. Theſe Plants grow wild in the South of *France*, in *Spain, Portugal*, and ſome in the *Levant*; from whence their Seeds have been obtained by thoſe Perſons who delight in Botanical Studies: ſome of theſe Sorts grow upright to the Height of two Feet; but the greateſt Part of them trail upon the Ground, and have woody Branches: the chief Beauty of theſe Plants conſiſts in their hoary Leaves; for the Flowers are ſmall, and have very little Beauty in them; ſo the Plants are ſeldom preſerved in Gardens for their Beauty: however, ſome of the ſhrubby Kinds may be admitted into the Pleaſure-garden; where, if they are planted on a dry lean Soil, they will abide many Years, and add to the Variety.

Theſe Plants may be diſpoſed in a Garden, ſo as to afford Pleaſure, by mixing them with *Marum*, Maſtich, and ſeveral other aromatic Plants, upon the ſloping Sides of Banks, which are expoſed to the Sun; or upon little Hillocks raiſed in a ſheltered Situation; where, by the Diverſity of their hoary Branches, being of various Shapes, they will make a pretty Appearance: and in ſuch Places they will reſiſt the Cold much better than when they are planted in a good Soil; for if they grow freely in Summer, their Shoots will be replete with Moiſture, and the Froſt will be much more likely to deſtroy theſe than it will thoſe whoſe Shoots are ſhort, dry, and hard: and this holds thro' moſt of the aromatic Plants; for Sage, Roſmary, Lavender, &c. which have been growing out of dry Walls, tho' greatly expoſed to all Winds, have reſiſted the Cold of the ſevereſt Winters, when moſt of the Plants which were growing in Gardens were deſtroyed.

They are propagated in *England*, where they ſeldom produce Seeds, by Cuttings or Slips, which ſhould be planted the Beginning of *April*, juſt before they are about to ſhoot, upon a Border expoſed to the Eaſt: and if the Seaſon proves dry, they muſt be watered and ſhaded until they have taken Root; and afterward they will require no other Care but to keep them clean from Weeds; and at *Michaelmas* the Plants ſhould be removed where they are deſign'd to remain; but it will be proper to put a Plant of each Sort in Pots, that they may be ſheltered in Winter, to preſerve the Kinds.

The ſecond and ſixth Sorts are ſometimes uſed in Medicine.

POLYANTHUS. *Vide* Primula.

POLYGALA, Milkwort.

The *Characters* are;

It hath a Flower conſiſting of one Leaf, of an anomalous Figure, perforated behind, but divided into two Lips before: the uppermoſt Lip is divided into two Parts; but the under one is curiouſly fringed: out of the lower Part of the Flower riſes the Pointal, which afterward becomes a broad Fruit, divided into two Cells, which contain oblong Seeds: the Fruit is generally incloſ'd in the Flower-cup, which is compoſ'd of five Leaves; viz. *three ſmall ones, and two larger, which afterward embrace the Fruit like Wings.*

The *Species* are;

1. Polygala *major cærulea. Tabern.* Greater blue Milkwort.

2. Polygala *major alba. Tabern.* Greater white Milkwort.

3. Polygala *vulgaris. C. B. P.* Common Milkwort, with a blue Flower.

4. Polygala *alba. Tabern.* White common Milkwort.

5. Polygala *montana minima myrtifolia. Inſt. R. H.* The leaſt mountain Milkwort, with a Myrtle-leaf.

6. Polygala *Cretica vulgari ſimilis, flore albido longiore. Tourn. Cor.* Milkwort of *Crete*, like the common Sort, with a longer whitiſh Flower.

7. Polygala *Orientalis ſupina myrtifolia, flore cæruleo. Tourn. Cor.* Low Eaſtern Milkwort, with a Myrtle-leaf, and a blue Flower.

8. Polygala *Orientalis linifolia, flore magno albo. Tourn. Cor.* Eaſtern Milkwort, with a Flax-leaf, and a large white Flower.

9. Polygala *Orientalis linifolia, flore magno purpureo. Tourn. Cor.* Eaſtern Milkwort, with a Flax-leaf, and a large purple Flower.

10. Polygala *Luſitanica fruteſcens, magno flore, foliis minimis. Inſt. R. H.* Shrubby *Portugal* Milkwort, with a large Flower, and very ſmall Leaves.

11. Polygala *Africana fruteſcens anguſtifolia major. Oldenl.* Greater ſhrubby *African* Milkwort, with a narrow Leaf.

12. Polygala *Africana, lini folio, magno flore. Oldenl. African* Milkwort, with a Flax-leaf, and a large Flower.

13. Polygala *Virginiana, foliis oblongis, floribus in thyrſo candidis, radice alexipharmica.* Milkwort of *Virginia*, with oblong Leaves, and white Flowers, growing in a looſe Spike, whoſe Root is alexipharmac; commonly called the Senegaw Rattle-ſnake-root.

14. Polygala *cærulea Americana, anguſtis & denſioribus foliis, vulgo Clin-clin. Feuillée.* Blue *American* Milkwort, with narrow Leaves; commonly called by the *Indians* Clinclin.

15. Polygala *rubra Virginiana, ſpica parva compacta. Baniſt.* Red *Virginian* Milkwort, with a ſmall compact Spike.

16. Polygala *ſpicata rubra major, foliis & caulibus cæruleſcentibus. Baniſt.* Greater red ſpiked Milkwort, with bluiſh Leaves and Stalks.

17. Polygala *ſ. Flos ambarvalis Virginiana, floribus luteis in caput oblongum*

longum congeſtis. Baniſt. Virginian Milkwort, with yellow Flowers collected in an oblong Head.

18. Polygala *quadrifolia ſ. cruciata, floribus ex viridi rubentibus, in globum compactis. Baniſt.* Four-leav'd Milkwort, with rediſh-green Flowers, growing in a compact Globe.

19. Polygala *quadrifolia minor Virginiana, ſpica parva rubenti. Baniſt.* Smaller four leav'd *Virginian* Milkwort, with a ſmall rediſh Spike.

20. Polygala *Mariana, anguſtiore folio, flore purpureo. Pluk. Mantiſ.* Narrow-leav'd Milkwort of *Maryland*, with a purple Flower.

21. Polygala *Mariana quadrifolia minor, ſpica parva albicante. Pluk. Mantiſ.* Smaller four-leav'd Milkwort of *Maryland*, with a ſmall whitiſh Spike.

22. Polygala *Africana fruteſcens, folio buxi, flore maximo. Oldenl.* Shrubby *African* Milkwort, with a Box-leaf, and a very large Flower.

The four firſt Species are found wild in moiſt Meadows in divers Parts of *England*, and are never preſerved in Gardens, except for the ſake of Variety: however, I thought proper to inſert them in this Place, to introduce the other Sorts; ſome of which are beautiful Plants, and are worthy to be preſerved in all curious Collections of rare Plants.

The fifth, ſixth, ſeventh, and eighth Sorts are alſo very humble Plants, which grow wild in *Spain*, *Italy*, and the South of *France*, and are ſeldom introduced in Gardens; for it is very difficult to get any of theſe Plants to grow, when they are tranſplanted from Fields to Gardens; for they delight to grow amongſt the Graſs: ſo that when it is clear'd from about them, they ſeldom thrive.

The ſixth, ſeventh, eighth, and ninth Sorts were diſcovered by Dr. *Tournefort*, in the *Levant*: theſe are alſo low Plants, which grow in the ſame manner as the former; therefore are not eaſily cultivated in Gardens: the only Method to get theſe to grow in a Garden, is, to ſow their Seeds in Autumn, ſoon after they are ripe, in a ſhady Situation, and a moiſt Soil; where the Plants will come up the following Spring, and produce Flowers; but they ſeldom continue long after.

The tenth, eleventh, and twelfth Sorts are ſhrubby Plants, which are preſerved in ſome curious Gardens for Variety. Theſe may be alſo propagated by Seeds, which ſhould be ſown on a moderate Hot-bed in the Spring; and when the Plants are come up, they ſhould be tranſplanted into ſeparate Pots filled with freſh light Earth, and then plunged into the Hot-bed again, obſerving to ſhade them from the Sun until they have taken Root; after which time they ſhould have a large Share of freſh Air in warm Weather, and muſt be frequently watered. About the middle of *May* theſe Plants ſhould be inured to bear the open Air by degrees; and in *June* they may be placed abroad in a ſheltered Situation, where they may remain during the Summer-ſeaſon; and in Autumn they muſt be removed into the Green-houſe, and managed as hath been directed for Myrtles and Oleanders. Theſe Plants continue a long time in Flower; ſo are worthy of a Place in every curious Garden, for the ſake of Variety.

The fourteenth Sort is a Native of the Mountains in the Kingdom of *Chily*, in the *Spaniſh Weſt-Indies*, where it is uſed by the *Indians* to cure Pleuriſies, and all Complaints of the Side. This Sort is of low

Growth, ſeldom riſing higher than the common Sort; but is too tender to live in the open Air in *England*; ſo the Plants ſhould be planted in Pots, and preſerved in the Green-houſe in Winter. This may be propagated by Seeds, as the two former Sorts.

The next ſeven Sorts, as alſo the thirteenth, are all of them Natives of *Virginia*, *Maryland*, *New-England*, and ſeveral other Places in the North of *America*; ſo are hardy enough to live in the open Air in *England*, provided they are planted in a warm Situation, and on a light Soil. Theſe are very pretty Plants, and require very little Trouble to cultivate them; for after they are come up from Seeds, the only Care they require, is, to keep them clear from Weeds, and in very dry Weather to water them while they are young; for when they have obtained Strength, they will not be in much Danger of ſuffering by Drought; for the Roots run pretty deep into the Ground, ſo will find Nouriſhment to ſupport them.

The Root of the thirteenth Sort hath been long uſed by the *Senegaw Indians* to cure the Bite of the Rattle-ſnake; which, if taken in time, is an infallible Remedy. And of late Years it hath been uſed by the Inhabitants of *Virginia* in many Diſorders, which are occaſioned by a thick ſizy Blood; ſo that the Root of this Plant, when its Virtues are fully known, may become one of the moſt uſeful Medicines yet diſcovered. The fourteenth Sort, by the Account which *Pere Feuillée* gives of it, partakes of the ſame Qualities with this, tho' the *Indians* uſe it differently; for he ſays they make a Decoction of the Plant, which they drink to cure the Pain of the Side; whereas the *Senegaw Indians* uſe the Root of the thirteenth Sort, which they powder, and generally carry about them, when they travel in the Woods, leſt they ſhould be bit by the Rattle-ſnake; and whenever this happens, they take a Quantity of the Powder inwardly, and apply ſome of it to the Part bitten; which is a ſure Remedy.

The twenty-ſecond Sort is propagated by Seeds, which ſhould be ſown in Pots of light Earth, ſoon after it is ripe, and ſheltered in Winter; and in the Spring the Pots ſhould be placed upon a moderate Hot-bed: and when the Plants are come up, they ſhould be prick'd into ſmall Pots fill'd with light rich Earth, and plunged into another Hot-bed, where they ſhould be ſhaded until they have taken Root, and often refreſhed with Water; after which they muſt have Air given them in proportion to the Warmth of the Seaſon; and in *July* they may be removed into the open Air, placing them in a warm Situation, where they may be ſheltered from ſtrong Winds; and in dry Weather they muſt be often refreſhed with Water: in this Place they may remain until *October*, when the Nights begin to be froſty; then you ſhould remove them into the Green-houſe, placing them where they may have the Advantage of the free Air, when the Weather is favourable enough to admit of the Glaſſes being open'd; for they only require to be protected from Froſt. During the Winter-ſeaſon they ſhould often be refreſhed with Water; but it ſhould not be given to them in large Quantities, which will injure their Roots. In Summer they may be expoſed with Myrtles, Geraniums, &c. in a Situation where they are defended from ſtrong Winds; and as their Roots increaſe, the Size of their

Pots ſhould be inlarg'd; but you muſt be very cautious not to over-pot them, which is injurious to all Sorts of Exotic Plants.

The Earth in which theſe Plants are ſet, ſhould be rich, freſh, and light, in which they will thrive exceedingly, and continue in Flower moſt Part of the Year, which renders it very valuable; and if the Seaſon proves favourable, the Seeds will ripen very well: but you muſt be careful to gather them when ripe, otherwiſe they will drop off, and be loſt. The Seeds of this Plant will ſometimes remain above a Year in the Ground, ſo that the Earth in the Pots ſhould not be diſturbed when the Plants do not come up the firſt Seaſon.

POLYGONATUM, *Solomon*'s Seal.

The *Characters* are;

The Flower conſiſts of one Leaf, is tubulous, and expands at the Top in Shape of a Bell, and is divided into ſeveral Segments: the Ovary, which is ſituated in the Centre of the Flower, becomes a ſoft globular Fruit, containing roundiſh Seeds

The *Species* are;

1. POLYGONATUM *latifolium vulgare. C. B. P.* Common broad-leav'd *Solomon*'s Seal.
2. POLYGONATUM *latifolium vulgare, caulibus rubentibus. H. L.* Common broad-leav'd *Solomon*'s Seal, with red Stalks.
3. POLYGONATUM *latifolium minus, flore majore. C. B. P.* Leſſer broad-leav'd *Solomon*'s Seal, with a larger Flower.
4. POLYGONATUM *latifolium, flore duplici odore. H. R. Par.* Broad-leav'd *Solomon*'s Seal, with a double ſweet-ſmelling Flower.
5. POLYGONATUM *latifolium maximum. C. B. P.* The greateſt broad-leav'd *Solomon*'s Seal.
6. POLYGONATUM *latifolium, hellebori albi foliis. C. B. P.* Broad-leav'd *Solomon*'s Seal, with Leaves like the white Hellebore.
7. POLYGONATUM *latifolium, flore majore odoro. C. B. P.* Broad-leav'd *Solomon*'s Seal, with a large ſweet Flower.
8. POLYGONATUM *Orientale latifolium, flore parvo. Tourn. Cor.* Eaſtern broad-leav'd *Solomon*'s Seal, with a ſmall Flower.
9. POLYGONATUM *anguſtifolium non ramoſum. C. B. P.* Narrow-leav'd unbranched *Solomon*'s Seal.
10. POLYGONATUM *anguſtifolium ramoſum. C. B. P.* Narrow-leav'd branching *Solomon*'s Seal.
11. POLYGONATUM *Americanum ſcandens altiſſimum, foliis tamni. Plum.* The talleſt climbing *American Solomon*'s Seal.

Theſe Plants are eaſily propagated by parting of their Roots in the Spring, before they begin to ſhoot, obſerving always to preſerve a Bud to each Off-ſet: they ſhould be planted in a freſh light Earth, where they will thrive exceedingly; but if it be over-rich, it will deſtroy their Roots. The firſt Sort is the moſt common in *England*, and is what the College has directed for medicinal Uſe.

The fifth and ſixth Sorts grow very tall, provided they are planted in a pretty good Soil. In a moiſt Seaſon it is common for theſe to be upward of three Feet high; whereas the ordinary Sort ſeldom riſes above half that Height. The Leaves of theſe Sorts are alſo very large, ſo that they make an handſome Appearance in the Borders of large Gardens.

The ſeventh Sort hath broader Leaves than the common Sort; but doth not grow much higher. The Flowers of this Sort being larger, and having an agreeable Scent, render it worthy of a Place in large Gardens.

The eighth Sort was diſcovered by Dr. *Tournefort* in the *Levant*; but is not common in *Europe*: this hath a broader Leaf than the common Sort, and the Flower is much ſmaller. It is preſerved in ſome curious Botanic Gardens, for the ſake of Variety.

The ninth and tenth Sorts are very different from either of the former: theſe have four or five Leaves, produced at each Joint, which are much longer and narrower than thoſe of the common Sort; ſo that they make a very different Appearance; therefore ſhould be allowed a Place in large Gardens, for the ſake of Variety.

All theſe Sorts are as hardy as the common *Solomon*'s Seal, and may be propagated by parting of their Roots, in the ſame manner as is directed for the common Sort.

The eleventh Sort is a Native of the warmeſt Parts of *America*, where it grows in the Woods, and climbs on whatever Trees grow near it; by the Help of which it riſes to a great Height. This produces its Flowers in long Bunches, ſomewhat like the black Briony.

The Seeds of this Plant were ſent from *Campechy* by Mr. *Robert Millar*, Surgeon. This Plant muſt be preſerved in Stoves, otherwiſe it will not live thro' the Winter in this Country: it may be propagated by Seeds, which ſhould be ſown on an Hot-bed early in the Spring: and when the Plants are come up, they ſhould be treated in the ſame manner as hath been directed for *Dioſcoria*: with which Management this Plant will thrive, and produce Flowers in this Country.

POLYPODIUM, Polypody.

The *Characters* are;

It is a capillary Plant, with oblong jagged Leaves, having a middle Rib, which joins them to the Stalks running thro' each Diviſion.

The *Species* are;

1. Polypodium *vulgare. C.B.P.* Common Polypody.

2. Polypodium *majus, ſerrato folio. Barr. Icon.* Greater Polypody, with a ſerrated Leaf.

3. Polypodium *Cambro-Britannicum, pinnulis ad margines laciniatis. Raii Syn. Welſh* Polypody, with laciniated Leaves.

There are ſeveral other Species of this Plant, which are Natives of *America*; ſome of which are preſerved in ſome curious Botanic Gardens for Variety: but as they are rarely cultivated in other Gardens, it is not worth while to enumerate them in this Place.

The firſt Sort is that which is uſed in Medicine, and is found growing upon old Walls, and ſhady Banks, in divers Parts of *England*. The ſecond ſeems to be only a Variety of the firſt, which differs therefrom in being larger, and having ſerrated Leaves. The third Sort was brought from *Wales*, where it grows in great Plenty, and is the moſt beautiful of all the Sorts. Theſe Plants may be propagated by parting of their Roots in the Spring before they ſhoot, and ſhould be planted in a very poor moiſt Soil, under the Shade of a Wall; for if they are expos'd to the Sun, they will not thrive: they chiefly delight to grow out of the Joints of Walls, and old Buildings; but are commonly found expoſed to the North.

POMGRANATE. *Vide* Punica.

POMUM ADAMI. *Vide* Aurantium.

POPULAGO, Marſh-marigold.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are plac'd circularly, and expand in form of a Roſe; in the middle of which riſes the Pointal, which afterward becomes a membranaceous Fruit; in which there are ſeveral Cells, which are, for the moſt part, bent downward, collected into little Heads, and are full of oblong Seeds.

The *Species* are;

1. Populago *flore majore. Tourn.* Marſh-marigold with a large Flower.

2. Populago *flore minore. Tourn.* Marſh-marigold with a ſmaller Flower.

3. Populago *flore pleno. Tourn.* Marſh-marigold with a double Flower.

The two firſt Sorts are very common on boggy and watry Places in divers Parts of *England*, and are ſeldom cultivated in Gardens: but the third Sort, which is a Variety from the ſecond, is preſerved in Gardens for its fine double Flowers.

This Plant is propagated by parting of the Roots in Autumn, and muſt be planted on a moiſt Soil, otherwiſe the Flowers will not be near ſo fair, nor will the Plants thrive. Theſe are very proper to place in very wet Parts of the Garden, where few other Plants will thrive; and will afford an agreeable Variety during their Seaſon of Flowering, which is from the Middle of *April* until the Latter-end of *May*: ſo that they are worthy of a Place in every curious Flower-garden.

POPULUS, The Poplar-tree.

The *Characters* are;

The Leaves are broad, and, for the moſt part, angular: the Male Trees produce amentaceous Flowers, which have many little Leaves and Apices, *but are barren: the Female Trees produce membranaceous Pods, which open into two Parts, containing many Seeds, which have a large Quantity of Down adhering to them, and are collected into Spikes.*

The *Species* are;

1. Populus *alba, minoribus foliis. C. B. P.* White Poplar, with ſmaller Leaves.

2. Populus *alba, majoribus foliis. C. B. P.* White Poplar, with large Leaves, commonly call'd the Abele-tree.

3. Populus *tremula. C. B. P.* The trembling Poplar, or Aſpen-tree.

4. Populus *nigra. C. B. P.* The black Poplar-tree, by ſome falſly called the Cotton-tree.

5. Populus *alba, folio minore variegato.* The white Poplar, with ſtriped Leaves.

6. Populus *nigra Caroliniana, folio maximo, gemmis balſamum odoratiſſimum fundentibus. Cateſb.* The *Carolina* black Poplar, with the largeſt Leaf; from whoſe Buds iſſues a very ſweet Balſam.

Theſe Trees may be propagated either from Layers or Cuttings, which will readily take Root; as alſo from Suckers, which the white Poplars ſend up from their Roots in great Plenty. The beſt time for tranſplanting theſe Suckers is in *October*, when their Leaves begin to decay. Theſe may be placed in a Nurſery for two or three Years, to get Strength, before they are planted out where they are deſign'd to remain: but if you intend to propagate them from Cuttings, it is better to defer the doing of that until *February*; at which time you may plant Truncheons of four or five Feet long, thruſting them about a Foot into the Ground: theſe will readily take Root; and if the Soil be moiſt in which they are planted, will arrive to a conſiderable Bulk in a few Years.

The black Poplar is not ſo apt to take Root from large Truncheons; therefore 'tis the better Method to plant Cuttings about a Foot and an half in Length, thruſting them a Foot deep into the Ground: theſe will take Root very freely, and may be afterward tranſplanted where they are to remain. This Sort will grow upon almoſt any Soil; but will thrive beſt in moiſt Places.

I have planted Cuttings of this Tree, which in four Years have been bigger in the Trunk than a Man's Thigh, and near twenty Feet in Height, and this upon a very indifferent Soil; but in a moiſt Soil, it is common for theſe Trees to ſhoot ten or twelve Feet in a Seaſon: ſo that where a Perſon hath a mind to make a Shelter in a few Years, there is ſcarce any Tree ſo proper for that Purpoſe as this: but they ſhould not be planted too near the Pleaſure-garden, becauſe the Down which falls from theſe Trees will make a prodigious Litter in the Spring.

The white Sorts, as alſo the Aſpen-tree, likewiſe cauſe a great Litter in the Spring, when their Down falls off; and their Roots being very apt to produce a large Quantity of Suckers, eſpecially thoſe Trees that came from Suckers, this renders them unfit to be planted near an Houſe or Garden; but when they are interſpers'd with other Trees in large Plantations, they afford an agreeable Variety; their Leaves being very white on their Under-ſides, which, when blown with the Wind, are turn'd to Sight.

A conſiderable Advantage may be obtain'd by planting theſe Trees upon moiſt boggy Soils, where few other Trees will thrive: many ſuch Places there are in *England*, which do not, at preſent, bring in much Money to their Owners; whereas, if they were planted with theſe Trees, they would, in a very few Years, over-purchaſe the Ground, clear of all Expence: but there are many Perſons in *England*, who think nothing, except Corn, worth cultivateing: or, if they plant Timber, it muſt be Oak, Aſh, or Elm; and if their Land be not proper for either of theſe, it is deem'd little worth; whereas if the Nature of the Soil was examined, and proper Sorts of Plants adapted to it, there might be very great Advantage made of ſeveral large Tracts of Land, which at this time lie neglected.

The Wood of theſe Trees, eſpecially of the Abele, is very good to lay for Floors, where it will laſt many Years; and, for its exceeding Whiteneſs, is, by many Perſons, preferr'd to Oak; but, being of a ſoft Contexture, is very ſubject to take the Impreſſion of Nails, *&c.* which renders it leſs proper for this Purpoſe: it is alſo very proper for Wainſcoting of Rooms, being leſs ſubject to ſwell or ſhrink, than moſt other Sorts of Wood: but for Turnery-ware, there is no Wood equal to this for its exceeding Whiteneſs, ſo that Trays, Bowls, and many other Utenſils, are made of it; and the Bellows-makers prefer it for their Uſe; as do alſo the Shoemakers, not only for Heels, but alſo for the Soles of Shoes: it is alſo very good to make light Carts; and the Poles are very proper to ſupport Vines, Hops, *&c.* and the Lopping will afford good Fuel, which in many Countries is much wanted.

The ſixth Sort of Poplar-tree grows by the Sides of Rivers, and in other moiſt Places, in *South-Carolina*, where it riſes to a very large Tree. The young Branches of this

Tree are commonly angular, ſometimes having three, and at other times four Angles. The Leaves are much broader, and are not ſo pointed as thoſe of the common black Poplar. The Buds of the Leaves are very large; and in the Spring, juſt before they puſh, there iſſues out of them a very ſweet Balſam.

Although this Tree is a Native of a much warmer Country than *England*, yet it is hardy enough to endure the Cold of our Winters in the open Air; and may be propagated by Cuttings, in the ſame manner as the common black Poplar. The beſt time to plant theſe Cuttings is in the Beginning of *November*: they ſhould be about a Foot or fourteen Inches long, and ſhould be planted ſix or eight Inches in the Ground. If the Spring following ſhould prove dry, they muſt be frequently watered until they have made Roots; after which time they will require no farther Care, but to keep them clear from Weeds. Theſe Cuttings will be rooted enough to bear tranſplanting in one Year; and the *October* following they ſhould be removed; and planted either in a Nurſery, where they may be train'd up to Stems, or in the Places where they are deſign'd to remain, which muſt be in a moiſt Soil, where they will grow to be large Trees; and being intermix'd with other Trees of the ſame Growth, will make an agreeable Diverſity.

PORRUM, Leek.

The *Characters* are;

The Flower conſiſts of ſix Petals, and is ſhap'd, as it were, like a Bell: in the Centre ariſes the Pointal, which afterward becomes a roundiſh Fruit, divided into three Cells, which contain roundiſh Seeds: to theſe Notes muſt be added, The Stamina *are generally broad and flat, ending in three Capillaments; of which the middle one is furniſh'd with a Chive: the Flowers are alſo gather'd into almoſt globular Bunches: the Roots are long, cylindrical, and coated; the Coats ending in plain Leaves.*

The *Species* are;

1. PORRUM *commune capitatum.* C. B. P. The common Leek.

2. PORRUM *ſectivum latifolium.* C. B. P. Broad-leav'd Leek, commonly call'd the *London* Leek.

There are ſome other Species of this Plant, which grow wild in the South of *France*, and *Spain*; but as they are ſeldom cultivated in Gardens, I ſhall forbear to mention them here. The two Sorts here mention'd are by many Perſons affirm'd to be the ſame, both of them riſing from the ſame Seed: but this is what the Gardeners near *London* will not believe; for they never ſow Seeds of the latter, if they can procure thoſe of the firſt Sort, there being a great Difference in the Size of the Head, or principal Part of the Leek; but whether by long cultivating they may not alter, I cannot poſitively affirm, having never ſown the Seeds of the latter Sort above one Year.

Theſe Plants are cultivated by ſowing their Seeds in the Spring, in the ſame manner as was directed for Onions, with which theſe are commonly ſown, the two Sorts of Seeds being mix'd according to the Proportion which is deſir'd of either Sort; though the moſt common Method is, to mix an equal Quantity of both; for the Onions will greatly out-grow the Leeks in the Spring; but theſe being drawn off in *July*, the Leeks will have time to grow large afterwards, ſo that there may be a moderate Crop of both Sorts. The Management of Leeks being exactly the ſame with Onions, I ſhall not repeat it in this Place; but ſhall only add, that many Perſons ſow their Leeks very thick in Beds in the Spring; and in *June*, after ſome of their early Crops are taken off, they dig up the Ground, and plant their Leeks out thereon, in Rows a Foot apart, and ſix Inches aſunder in the Rows, obſerving to water them until they have taken Root; after which they will require no further Culture, but to clear the Ground from Weeds: the Leeks, thus planted, will grow to a great Size, provided the Ground be good; and this Method is very proper for ſuch Perſons who have little room.

If you would ſave the Seeds of this Plant, you ſhould make choice of ſome of the largeſt and beſt you have, which muſt remain in the Place where they grew, until *February*; when they ſhould be tranſplanted in a Row againſt a warm Hedge, Pale, or Wall, at about eight Inches aſunder; and when their Stems advance, they ſhould be ſupported by a String, to prevent their being broken down, to which they are very liable, eſpecially when in Head; and the cloſer they are drawn to the Fence in Autumn, the better the Seeds will ripen; for it ſometimes happens, in cold Summers or Autumns, that thoſe which grow in the open Garden, do not perfect their Seeds in this Country, eſpecially if there ſhould be ſharp Froſts early in Autumn, which will intirely ſpoil the Seed.

When it is ripe (which may be known by the Heads changing brown), you ſhould cut off their Heads with about a Foot or more of the Stalk to each, and tie them in Bundles, three or four Heads in each, and hang them up in a dry Place, where they may remain till *Chriſtmas*, or after, when you may threſh out the Seeds for Uſe. The Huſk of theſe Seeds is very tough, which renders it very difficult to get out the Seeds; therefore ſome Perſons, who have but a ſmall Quantity, rub it hard againſt a rough Tile, which will break the Huſks, and get the Seeds out better than moſt other Methods I have known uſed.

PORTULACA, Purſlane.

The *Characters* are;

The Flower conſiſts of many Leaves, which expand in form of a Roſe; out of whoſe Flower-cup (which conſiſts of one Leaf) ariſes the Pointal, which, together with the Flower-cup, becomes a Fruit for the moſt part oval, full of ſmall Seeds, and furniſh'd with two Shells or Huſks at top; of which the outer one, which was the Part of the Flower-cup that was ſplit in two, opens firſt; and the inner one, which is the Pointal inlarg'd, opens laſt, doubly and tranſverſly, while the lower Part of the Flower-cup adheres to the Footſtalk.

The *Species* are;

1. PORTULACA *latifolia ſeu ſativa. C. B. P.* Broad-leav'd or Garden Purſlane.
2. PORTULACA *ſativa latifolia, foliis flavis. Mor. Hiſt.* Broad-leav'd Garden Purſlane, with yellow Leaves.
3. PORTULACA *anguſtifolia ſive ſylveſtris. C. B. P.* Narrow-leav'd or Wild Purſlane.
4. PORTULACA *Curaſſavica, folio capparidis. Par. Bat.* Purſlane from *Curaſſo*, with a Caper-leaf.

The firſt Sort here mentioned is what the Gardeners near *London* do chiefly cultivate; though the ſecond Sort does very often come up mix'd with the firſt; but whether it is only an accidental Variety ariſing from the ſame Seeds, or that the Seeds are promiſcuouſly ſaved, I cannot determine; indeed, there is no other Difference between them, but only the Colour of their Leaves, ſo that they are both equally good for Uſe; but the green Sort, having a better Appearance, is generally preferr'd in the Markets.

The wild Sort is not a Native of *England*, but grows plentifully in many warm Countries; where when it has once obtain'd ſo as to ſhed its Seeds, 'tis very difficult to extirpate again. This is ſeldom uſ'd; though 'tis not different from the Garden Kind, except in the Smalneſs of its Leaves.

The fourth Sort is very common in moſt of the warm Parts of *America*, where it grows in great Plenty upon the Shores and Rocks near the Sea. This is preſerv'd in ſome curious Gardens for Variety, but is a Plant of no great Beauty.

Purſlane is propagated from Seeds, which may be ſown upon Beds of light rich Earth during any of the Summer-months; but if you intend to have it early in the Seaſon, it ſhould be ſown upon an Hot-bed; for it is too tender to be ſown in the open Air before *April*, and then it muſt be in a warm Situation. This Seed is very ſmall, ſo that a little of it will be ſufficient to ſupply a Family. There is no other Culture which this Plant requires, but to keep it clear from Weeds, and in dry Weather to water it three or four times a Week. In warm Weather this Plant will be fit for Uſe in ſix Weeks after ſowing; ſo that, in order to continue a Succeſſion of this Plant, you ſhould ſow it at three or four different Seaſons, allowing a Fortnight between each Sowing, which will be ſufficient to laſt the whole Seaſon, while it is proper to be eaten; for, being of a very cold Nature, it is unſafe to be eaten, except in the Heat of Summer, in *England*; for which Reaſon, it is not to any Purpoſe to ſow it upon an Hot-bed; ſince it will come early enough for Uſe in the open Air.

POTENTILLA, Cinquefoil.

The *Characters* are;

The Empalement of the Flower is of one Leaf, which is ſlightly cut into five Parts, and alternately cut deep into five Parts: the Flower is compoſed of five Leaves, which are inſerted into the Empalement, and ſpread open: in the Centre of the Flower there are ſeveral Pointals collected into one Head, and are attended by a Number of Stamina, *which riſe out of the Empalement: after the Flower is paſt, the Pointals become an Head of roundiſh Seeds included in the Empalement.*

The *Species* are;

1. POTENTILLA *foliis pinnatis, caule repente. Lin. Flor.* Silver-weed, or wild Tanſey.

2. POTENTILLA *foliis pinnatis quinatis, foliolis ovatis crenatis, caule erecto. Lin. Hort. Cliff.* Upright Cinquefoil, with Meadow-ſweet-leaves.

3. POTENTILLA *caule fruticoſo. Lin. Hort. Cliff.* Shrubby Cinquefoil.

4. POTENTILLA *foliis digitatis inciſo-ſerratis, caule recto. Lin. Hort. Cliff.* Greater upright Cinquefoil.

5. POTENTILLA *foliis digitatis longitudinaliter patenti-ſerratis, caule repente. Lin. Hort. Cliff.* Common creeping Cinquefoil.

6. POTENTILLA *foliis ternatis inciſis, caule diffuſo. Lin. Hort. Cliff.* The barren Strawberry, with upright Stalks.

There are ſome other Species of this Genus, which grow wild in ſeveral Parts of *Europe*; but are rarely admitted into Gardens; therefore I ſhall not enumerate them here: and of thoſe above-mention'd, it is only the third Species which is cultivated in Gardens; and this is found growing wild in ſome of the Northern Counties of *England*. The firſt Sort here mention'd ſtands in the Catalogue of Medicinal Plants in the Diſpenſatory: therefore I have mention'd it here, though it is one of the moſt common Weeds in *England*, growing plentifully on Commons and waſte Land every-where, but eſpecially on all cold Ground; where by its creeping Stalks, which put out Roots at every Joint, it ſpreads over the Surface of the Ground, and becomes a very troubleſome Weed.

The fifth Sort is alſo a bad Weed, having the ſame ſort of creeping Stalks as the firſt; ſo that whereever it once gets Poſſeſſion of the Ground, it multiplies and ſpreads to a great Diſtance; therefore theſe two Sorts ſhould be extirpated from every good Garden,

The ſecond, fourth, and ſixth Sorts are ſometimes preſerv'd in Gardens for the ſake of Variety; but as they are Plants of no Beauty, few Perſons care to allow them room in their Gardens: theſe will propagate very faſt by Seeds, which if permitted to fall on the Ground, the Plants will come up and thrive without any Culture. Theſe Plants, which come up from ſelf-ſown Seeds, will flower and produce Seeds the next Seaſon, and the Roots of the ſecond and fourth will continue ſeveral Years; but the ſixth is biennial, and generally periſhes ſoon after the Seeds are ripe.

The third Sort is propagated in many of the Nurſery-Gardens near *London* for Sale. This is a low Shrub, ſeldom riſing above four Feet high, branching out on every Side from the Stem: the Leaves are divided into ſeveral narrow Segments, which join at the Footſtalk: the Flowers are yellow, and in Shape like thoſe of the common Cinquefoil; theſe are produced at the Extremity of the Branches, and by their Succeſſion continue to flower upward of two Months, eſpecially when they grow upon a moiſt Soil.

This Plant is commonly propagated by Suckers, or laying down the tender Branches, which will take Root in one Year, and may then be taken off from the old Plants, and planted in a Nurſery for a Year or two, to get Strength, before they are planted where they are deſign'd to remain: it may alſo be propagated by Cuttings, which may be planted during any of the Summer-months, in a moiſt ſhady Border, where they will ſoon take Root, and the *Michaelmas* following, may be tranſplanted into the Nurſery.

The beſt Seaſon for tranſplanting of theſe Plants is in *October*, that they may get new Roots before the hard Froſt ſets in: for as this Plant grows naturally upon moiſt boggy Land, ſo when it is remov'd in the Spring, if due Care is not taken to water it in dry Weather, it is apt to miſcarry: nor will this Plant live in an hot dry Soil; but in a ſhady Situation, and on a cool moiſt Soil, it will thrive exceedingly.

The Title of this Genus has been long applied to the firſt Species by ſeveral Writers on Botany and Medicine; but Dr. *Tournefort* has ſeparated all thoſe Species which have wing'd Leaves, and conſtituted a Genus of them, by the Title of *Pentaphylloides*; which, being a compound Name, Dr. *Linnæus* has rejected: the other Species with handed Leaves has been ranged under the Genus of *Quinquefolium*; but now they are both join'd under the Title of *Potentilla*.

PRASIUM, Shrubby Hedge-nettle.

The *Characters* are;

The Empalement of the Flower is of one Leaf, divided into two Lips, the upper being cut into three acute Segments: the Flower is of the Lip-kind, the upper Lip being oval and erect; but the Beard is divided into three Parts, the middle Segment being broader than the other two: after the Flower is paſt, the four Germens *in the Flower turn to ſo many pulpy Berries, each incloſing a ſingle Seed.*

The *Species* are;

1. Prasium *foliis ovato-oblongis ſerratis. Lin. Hort. Cliff.* Shrubby ſtinking Hedge-nettle, with oblong ſawed Leaves.

2. Prasium *foliis ovatis, duplici utrinque crena notatis. Lin. Hort. Cliff.* Shrubby ſtinking Hedge-nettle, with oval Leaves indented on every Side.

The firſt Sort hath by ſome Botaniſts been rang'd with the Lamium, by others under the Genus of Meliſſa, and by Dr. *Tournefort* under that of Galeopſis, to which laſt it agrees very well in all its Characters, excepting that of the Seed being incloſed in a pulpy Cover, like a Berry, which is ſufficient Reaſon for ſeparating it from Galeopſis; though, by the eſtabliſh'd Rules of Dr. *Linnæus's* Method, it cannot be juſtified: yet he has ſeparated it from that Genus, and applied this old Name of *Dioſcorides*, which he had applied to a Plant of this Claſs, to this.

The ſecond Sort is ranged under the ſame Genus by Dr. *Boerhaave*; but in the *Hortus Catholicus* it is ranged with the Lamium.

Theſe are both low ſhrubby Plants, which ſeldom riſe above two Feet high, and retain their Leaves thro' the Year: they will live abroad in *England*, provided they are planted on a dry Soil, and in a warm Situation, and produce Flowers from the Beginning of *June* to the End of *Auguſt*; but there is little Beauty in their Flowers; ſo they are only preſerv'd by thoſe who are curious in collecting of rare Plants.

Theſe Plants are Natives of *Spain*, *Portugal*, and *Sicily*, ſo that they are impatient of ſevere Cold: therefore a Plant or two of each Sort ſhould be ſhelter'd in Winter; becauſe when the Froſt is very ſevere, they are often deſtroy'd when they are planted in the full Ground, though they will abide the Cold of our common Winters very well in the open Air.

They may be propagated either by Cuttings, or from the Seeds: if they are propagated by Cuttings, they ſhould be planted on a ſhady Border, toward the End of *April*; but the Cuttings ſhould not be taken from thoſe Plants which had been drawn weak, but rather from thoſe which had been expos'd to the open Air, whoſe Shoots are ſhort and ſtrong; and if a Joint of the former Year's Wood is cut to each of them, they will more certainly ſucceed: theſe Cuttings may remain in the ſame Border until the following Autumn, when they may be tranſplanted into the Places where they are to remain, or into Pots, that they may be ſhelter'd in Winter under a common Frame, where they may have as much free Air as poſſible in mild Weather, but only require to be ſcreen'd from hard Froſt.

If they are propagated by Seeds (which the Plants produce in Plenty every Year), they ſhould be ſown on a Bed of light Earth in *April*; and in *May* the Plants will come up, when they require no other Care but that of keeping them clean from

Weeds; and in the Autumn following they may be tranſplanted in the ſame manner as before directed for thoſe raiſed from Cuttings, and may be afterward treated more hardily, as they acquire Strength.

A Plant or two of each of theſe Species may be allow'd to have a Place where there are Collections of the different Sorts of ever-green Shrubs, for the ſake of Variety, eſpecially where the different Sorts of Ciſtus, Phlomis, Tree-wormwood, and Medicago, are admitted, becauſe theſe are equally hardy, and when a ſevere Winter happens, which deſtroys the one, the others are ſure of the ſame Fate.

PRENANTHES, Wild Lettuce.

The *Characters* are;

It hath floſculous Flowers, which are included in one common Empalement, which is cylindrical and ſquamous: the Florets are hermaphrodite, each being monopetalous, having one Side ſtretched out like a Tongue, and divided into four Segments, each of theſe having a Pointal in their Centre attended by five ſlender Stamina; *and afterward the Pointal becomes an oblong Seed, crowned with a Down.*

The *Species* are;

1. Prenanthes *floſculis quinis, foliis pinnato-haſtatis. Lin. Hort. Cliff.* Wild Lettuce, or Sowthiſtle, with ſpear-ſhap'd wing'd Leaves, and a yellow Flower.

2. Prenanthes *floſculis quinis, foliis lanceolatis denticulatis. Lin. Hort. Cliff.* Purple mountain wild Lettuce.

3. Prenanthes *floſculis plurimis, foliis haſtatis angulatis. Lin. Hort. Cliff. American* Wild Lettuce, with angular Leaves.

4. Prenanthes *autumnalis, flore dilute purpureo deorſum nutante, ſpicatim ad caulem diſpoſito, foliis ſcabris inciſis, caule ſingulari. Flor. Virg.* Dr. *Witt*'s Rattle-ſnake Root.

5. Prenanthes *foliis integris ſerratis ſcabris, radice repente, flore purpuro-cæruleo. American* wild Lettuce, with whole ſaw'd rough Leaves, a creeping Root, and purple Flower.

The firſt Sort grows wild upon the Sides of dry ſtony Banks, and on the Tops of Walls, in ſeveral Parts of *England*. The ſecond grows wild in ſeveral Parts of *Europe*: but the others are Natives of *America*. The fourth Sort has been eſteem'd a ſure Antidote to expel the Poiſon of the Rattle-ſnake, and therefore I have mention'd theſe Plants; for they are never preſerv'd in Gardens, except for the ſake of Variety, being troubleſome Weeds, where they are permitted to ſcatter their Seeds; ſo that whoever is deſirous to cultivate them, need be at no Trouble but to ſow their Seeds in a moiſt ſhady Situation, where the Plants will come up and thrive without any farther Care.

PRIMULA, Primroſe.

The *Characters* are;

The Flower conſiſts of one Leaf; the lower Part of which is tubuloſe, but the upper Part expands itſelf flat in form of a Salver, and is cut into ſeveral Segments: from the Flower-cup (which is fiſtulous) ariſes the Pointal; which, when the Flower is decay'd, becomes an oblong Fruit or Huſk, lying almoſt conceal'd in the Flower-cup, and opens at the Top, in which are contain'd many roundiſh Seeds faſten'd to the Placenta.

The *Species* are;

1 Primula *vulgaris. Park.* Common Primroſe.

2. Primula *Conſtantinopolitana, flore albo. Tourn.* Primroſe of *Conſtantinople*, with a white Flower,

commonly call'd the Paper-white Primroſe.

3. Primula *Conſtantinopolitana, flore dilute carneo. Tourn.* Primroſe of *Conſtantinople*, with a pale fleſh-colour'd Flower.

4. Primula *Conſtantinopolitana, flore dilute purpureo. Tourn.* Primroſe of *Conſtantinople*, with a pale-purple Flower.

5. Primula *Conſtantinopolitana, flore albo duplici.* Primroſe of *Conſtantinople*, with a double white Flower, commonly call'd the double Paper-white Primroſe.

6. Primula *vulgaris, flore dilute purpureo.* Common Primroſe, with a pale-purple Flower.

7. P[illegible]*ulgaris, flore pleno.* Common Primroſe, with a very double Flower.

8. Primula *vulgaris, flore pleno, dilute rubente.* Common Primroſe, with a double pale-red Flower.

9. Primula *pallido flore, elatior. Cluſ.* Common Pagils or Cowſlips.

10. Primula *umbellata odorata pratenſis.* Great Cowſlips, or Oxlips.

11. Primula *geminato flore. H. Eyſt.* Double Cowſlips, or Hoſe in Hoſe.

12. Primula *caulifera, flore luteo pleno odorato. J. B.* Cowſlip or Pagil, with a very double Flower.

13. Primula *hortenſis umbellata, caule & flore folioſo coccineo majore. H. L.* Garden Primroſe or Polyanthus, with a large red Flower.

14. Primulæ *umbellatæ odoratæ hortenſis ſimplicis varietas uberrima pro varietate jucundiſſima, coloris multiplicis. Boerh. Ind.*

There are a great Variety of the Garden Primroſes, or Polyanthus's, which are annually produced from Seeds; the Flowers of which are beautifully ſtrip'd, and ſome of them have a great Number of Flowers upon a Stalk, ſo that they equal the Auricula's in the Beauty of their Flowers; and as they require but little Culture, they have, in many Gardens, obtain'd the Preference to moſt other Spring Flowers.

The firſt Sort of Primroſe grows wild in Woods, and other ſhady Places, in moſt Parts of *England*, from whence their Roots may be eaſily tranſplanted into the Garden; where, if they are placed under Hedges, and in ſhady Walks, they make a beautiful Appearance early in the Spring, when few other Plants are in Flower.

The beſt Time to tranſplant them is at *Michaelmas*, that their Roots may have Strength to produce their Flowers early in the Spring. Theſe delight in a ſtrong rich Soil, but will grow in almoſt any Sort of Earth, provided they have a ſhady Situation.

The ſixth, ſeventh, and eighth Sorts are Varieties of the firſt, which have been accidentally produced from Seeds: theſe may be propagated by parting of their Roots at *Michaelmas*, and muſt be treated as the common Sort.

The ninth and tenth Sorts alſo grow wild in the Meadows in divers Parts of *England*, the Roots of which are often tranſplanted into Gardens; where, if they are intermix'd with other early-flowering Plants, they afford an agreeable Variety.

The eleventh and twelfth Sorts are Varieties which were produced from Seeds of the former; but the laſt is, at preſent, very rare in *England*. Theſe may be propagated by parting their Roots at *Michaelmas*, and ſhould be planted on a ſtrong Soil, and expos'd to the morning Sun..

The ſeveral Varieties of Polyanthus's

thus's are produced by ſowing of Seeds, which ſhould be ſav'd from ſuch Flowers as have large upright Stems, producing many Flowers upon a Stalk, the Flowers large, beautifully ſtrip'd, and that open flat: from the Seeds of ſuch Flowers there is room to hope for a great Variety of good Sorts.

Theſe Seeds ſhould be ſoon in Boxes fill'd with light rich Earth, in *December*, being very careful not to bury the Seed too deep; for, if it be only cover'd with light Earth, it will be ſufficient: theſe Boxes ſhould be plac'd where they may receive the Benefit of the morning Sun until Ten of the Clock; but muſt by no means be expos'd to the Heat of the Day, eſpecially when the Plants begin to appear; for at that time one whole Day's Sun will intirely deſtroy them: in the Spring, if the Seaſon ſhould prove dry, you muſt often refreſh them with Water; and as the Heat increaſes, you ſhould remove the Boxes more in the Shade; for the Heat is very injurious to them.

In *May* theſe Plants will be ſtrong enough to plant out; at which time you ſhould prepare ſome ſhady Borders, which ſhould be made rich; upon which you muſt ſet the Plants about four Inches aſunder, obſerving to water them until they have taken Root; after which they will require no farther Care but to keep them clear from Weeds, until the Latter-end of *Auguſt* following; when you ſhould prepare ſome Borders, which are expos'd to the Eaſt, with good light rich Earth, into which you muſt tranſplant your Polyanthus's, placing them ſix Inches aſunder equally in Rows, obſerving, if the Seaſon prove dry, to water them until they have taken Root. In theſe Borders your Plants will flower the ſucceeding Spring; at which time you muſt obſerve to mark ſuch of them as are fine, to preſerve; and the reſt may be tranſplanted into Wilderneſſes, and other ſhady Places in the Garden; where, although they are not very valuable Flowers, they will afford an agreeable Variety.

Thoſe which you intend to preſerve, may be remov'd ſoon after they have done flowering (provided you do not intend to ſave Seeds from them), and may be then parted and tranſplanted into a freſh Border of the like rich Earth, allowing them the ſame Diſtance as before; obſerving alſo to water them until they have taken Root, after which they will require no farther Care, but only to keep them clean from Weeds; and the following Spring they will produce ſtrong Flowers; and if the Kinds are good, will be little inferior to a Shew of Auricula's.

Theſe Roots ſhould be conſtantly remov'd and parted every Year, and the Earth of the Border chang'd, otherwiſe they will degenerate, and loſe the greateſt Part of their Beauty.

If you intend to ſave Seeds, which is the Method to obtain a great Variety, you muſt mark ſuch of them, which, as I ſaid before, have good Properties: theſe ſhould be, if poſſible, ſeparated from all ordinary Flowers; for if they ſtand ſurrounded with plain-colour'd Flowers, they will impregnate each other; whereby the Seeds of the valuable Flowers will not be near ſo good, as if the Plants had been in a ſeparate Border where no ordinary Flowers grew: therefore the beſt Way is to take out the Roots of ſuch as you do not eſteem, as ſoon as the Flowers open, and plant them in another Place, that there may be none left in the Border, but ſuch as you would chooſe for Seeds.

The Flowers of theſe ſhould not be gather'd, except ſuch as are produc'd ſingly upon Pedicles, leaving all ſuch as grow in large Bunches; and if the Seaſon ſhould prove dry, you muſt now-and-then refreſh them with Water, which will cauſe their Seeds to be larger, and in greater Quantity, than if they were intirely neglected. Towards the Latter-end of *May* the Seed will be ripe, which may be eaſily known by the Pods changeing brown, and opening; ſo that you ſhould at that time look over it three times a Week, gathering each time ſuch of it as is ripe, which ſhould be laid upon a Paper to dry, and may then be put up until the Seaſon of ſowing.

PRIMROSE-TREE. *Vide* Onagra.

PRINOS, Winter-berry.

The *Characters* are;

The Empalement of the Flower is of one Leaf, cut at the Brim into ſix Parts: the Flower is of the Wheel-ſhap'd Kind, cut into ſix Parts at the Top, but is of one Leaf: in the Centre of the Flower ariſes the Pointal, attended by ſix Stamina, *ſupporting obtuſe Summits: the Pointal afterward becomes a roundiſh Berry, having ſix Cells containing one hard angular Seed.*

We have but one *Species* of this Genus;

PRINOS. *Flor. Virg.* The Winter-berry.

This is but a low Shrub with us in *England*, rarely growing above four Feet high; but in *North America*, which is the native Place of its Growth, it riſes much higher, and branches out on every Side: the Branches are ſlender and pliant, and are garniſh'd with oblong blunt Leaves, which are intire. In *June* the Flowers are produced, which are white, and not very beautiful; but theſe are ſucceeded by round Berries, which are ſhap'd like thoſe of the Holly, and are of a bright-red Colour: theſe remain upon the Shrubs after the Leaves are fallen, and make a pretty Appearance, and from thence had the Title of Winter-berry applied to it, by the Inhabitants of thoſe Countries.

It is propagated by Seeds, which ſhould be ſown ſoon after they are ripe, upon a Bed of light Earth, covering them about one Inch with the ſame Sort of Earth: the Seeds which are ſo ſoon put into the Ground will many of them come up the following Spring, whereas thoſe which are kept longer out of the Ground, will remain a whole Year in the Ground before the Plants will appear, in the ſame manner as the Holly, Hawthorn, and ſome others; therefore the Ground ſhould not be diſturbed, if the Plants do not come up the firſt Year. The young Plants may be treated in the ſame manner as hath been directed for the *American* Hawthorns, and are full as hardy; but they delight in a moiſt Soil, and a ſhady Situation: for in hot dry Land they make but little Progreſs, and rarely produce any Fruit.

PRIVET. *Vide* Liguſtrum.

PROTEA, The Silver-tree, *vulgo*.

The *Characters* are;

The Flower is of one Leaf, and are many of them collected in an Head, like thoſe of the Artichoke: in each of theſe the Pointal is ſituated at the Bottom, attended by four Stamina, *which extend beyond the Petal of the Flower: the Pointal afterward becomes a ſingle roundiſh Seed: the Seeds are collected together in ſuch a manner as to form a ſort of Cone.*

The *Species* are;

1. **Protea** *foliis lineari-lanceolatis integerrimis, ſuperioribus hirſutis nitidis. Flor. Leyd.* The narrow or willow-leav'd Silver-tree.

2. **Protea** *foliis lanceolatis integerrimis acutis hirſutis nitidis. Lin. Hort. Cliff.* The broad-leav'd Silver-tree.

3. **Protea** *foliis lanceolatis acuminatis flexuoſis, capitulis corona foliacea ſuccinctis. Flor. Leyd.* Silver-tree with flexible pointed ſpear-ſhap'd Seeds, and the Heads crown'd with Leaves.

Theſe Plants are Natives of the Country near the *Cape of Good Hope* in *Africa*, where there are a great Number of Species: in the Catalogue of the *Leyden* Garden there are upward of twenty Sorts enumerated: not that they have them growing there, but they have good Drawings of them, which were made in the Country where they are Natives. The three Sorts here mention'd are what I have ſeen growing; but at preſent we have but two of them in the *Engliſh* Gardens, which are the firſt and ſecond Species, and theſe are but in few Gardens here.

Theſe Plants are many of them well figured in the Index of the Plants of the *Leyden* Garden, which was publiſh'd by Dr. *Boerhaave* in the Year 1719. by the Titles of *Lepidocarpodendron*, *Conocarpodendron*, and *Hypophyllocarpodendron*; and by ſome former Writers on Botany, this Genus was intituled *Scolymo-cephalus*, from the Reſemblance which the Cones of theſe Trees have to the Head of an Artichoke.

As theſe Plants are Natives of the *Cape of Good Hope*, they are too tender to live abroad through the Winter in *England*; but the firſt Sort is hardy enough to live in a good Green-houſe: this Sort will grow to the Height of ten or twelve Feet, and may be train'd up with a regular ſtrait Stem, and the Branches will naturally form a regular large Head: the Leaves are long and narrow, and of a ſhining ſilver Colour; and as they remain the whole Year, ſo the Plants make a fine Appearance, when they are intermix'd with others in the Green-houſe. In the Summer theſe may be plac'd in the open Air, in a ſhady Situation; for if they are expos'd to Winds, the Plants will be torn, and render'd unſightly, nor will they make any Progreſs in their Growth: in warm Weather they muſt be frequently water'd; but in cold Weather this muſt not be done in large Quantities, nor too often repeated, leſt it ſhould rot their Fibres.

The other Sorts are not ſo hardy as this; therefore they muſt be plac'd in a moderate Stove in the Winter, otherwiſe they cannot be preſerv'd here. Theſe do not form ſo large Heads as the firſt; but, however, for the fine ſilver Leaves with which their Branches are cloſely garniſh'd, they merit a Place in every good Collection of Exotic Plants.

I have not as yet ſeen either of theſe Sorts in Flower; though as the Plants grow older, we may hope to have them produce their Flowers in *England*: but if they ſhould not produce any, yet the fine Appearance which the Leaves of theſe Plants make, renders them worthy of being preſerv'd.

The firſt Sort may be propagated by Cuttings, which ſhould be planted in *April*, in Pots of rich Earth, and plunged into a moderate Hot-bed, and muſt be ſhaded from the Sun in the Heat of the Day, and duly water'd. Theſe Cuttings will have good Roots by the Month of *Auguſt*, when they ſhould be carefully

fully tranſplanted, each, into a ſeparate ſmall Pot fill'd with light rich Earth, and plac'd in a ſhady Situation until they have taken new Root; after which they may be placed in a ſheltered Situation, where they may remain till *October*, when they muſt be remov'd into the Greenhouſe.

The other Sorts are not ſo eaſily propagated; for I have not been able to get one Plant from the Cuttings; nor do the Branches which are laid down take Root, ſo that they are propagated from Seeds only; and as it is very difficult to procure their Seeds from the Country where theſe Trees are Natives, ſo they are very rare in *Europe*.

PRUNING OF TREES: There is not any Part of Gardening, which is of more general Uſe than that of Pruning; and yet it is very rare to ſee Fruit-trees ſkilfully manag'd: almoſt every Gardener will pretend to be a Maſter of this Buſineſs, though there are but few who rightly underſtand it; nor is it to be learn'd by Rote, but requires a ſtrict Obſervation of the different Manners of Growth of the ſeveral Sorts of Fruit-trees; ſome requiring to be manag'd one way, and others muſt be treated in a quite different Method, which is only to be known from carefully obſerving how each Kind is naturally diſpoſed to produce its Fruit: for ſome Sorts produce their Fruit on the ſame Year's Wood, as Vines; others produce their Fruit, for the moſt part, upon the former Year's Wood, as Peaches, Nectarines, &c. and others upon Curſons or Spurs, which are produc'd upon Wood of three, four, or five, to fifteen or twenty Years old, as Pears, Plums, Cherries, &c. therefore, in order to the right Management of Fruit-trees, there ſhould always be Proviſion made to have a ſufficient Quantity of bearing Wood in every Part of the Trees; and at the ſame time there ſhould not be a Superfluity of uſeleſs Branches, which would exhauſt the Strength of the Trees, and cauſe them to decay in a few Years.

The Reaſons which have been laid down for Pruning of Fruit-trees, are as follow: Firſt, to preſerve Trees longer in a vigorous bearing State; the ſecond is, to render the Trees more beautiful to the Eye; and, thirdly, to cauſe the Fruit to be larger, and better taſted.

1. It preſerves a Tree longer in an healthy bearing State; for by pruning off all ſuperfluous Branches, ſo that there are no more left upon the Tree than are neceſſary, or than the Roots can nouriſh properly, the Root is not exhauſted in ſupplying uſeleſs Branches, which muſt afterwards be cut out; whereby much of the Sap will be uſeleſly expended.

2. By ſkilful Pruning of a Tree, it is render'd much more pleaſing to the Eye: but here I would not be underſtood to be an Advocate for a ſort of Pruning, which I have ſeen too much practis'd of late; *viz.* the drawing a regular Line againſt the Wall, according to the Shape or Figure they would reduce the Tree to, and cutting all the Branches, ſtrong or weak, exactly to the chalk'd Line; the Abſurdity of which Practice will ſoon appear to every one who will be at the Pains of obſerving the Difference of thoſe Branches ſhooting the ſucceeding Spring. All therefore that I mean by rendering a Tree beautiful, is, that the Branches are all prun'd according to their ſeveral Strengths, and are nail'd at equal Diſtances, in proportion to the different Sizes of their Leaves and Fruit; and that no Part of the Wall (ſo far as the Trees are advanc'd) be

left unfurniſh'd with bearing Wood. A Tree well manag'd, though it does not repreſent any regular Figure, yet will appear very beautiful to the Sight, when it is thus dreſs'd, and nail'd to the Wall.

3. It is of great Advantage to the Fruit; for the cutting away all uſeleſs Branches, and ſhortening all the bearing Shoots, according to the Strength of the Tree, will render the Tree more capable to nouriſh thoſe which are left remaining, ſo that the Fruit will be much larger, and better taſted. And this is the Advantage which thoſe Trees againſt Walls or Eſpaliers have, to ſuch as are Standards, and are permitted to grow as they are naturally inclined; for it is not their being trained either to a Wall or Eſpalier, which renders their Fruit ſo much better than Standards, but becauſe they have a leſs Quantity of Branches and Fruit for their Roots to nouriſh; and conſequently their Fruit will be larger, and better taſted.

The Reaſons for Pruning being thus exhibited, the next Thing is the Method of performing it; but this being fully handled under the ſeveral Articles of the different Kinds of Fruit, I ſhall not repeat it again in this Place.

PRUNUS, The Plum-tree.

The *Characters* are;

The Flower conſiſts of five Leaves, which are placed in a circular Order, and expand in form of a Roſe; from whoſe Flower-cup riſes the Pointal, which afterward becomes an oval or globular Fruit, having a ſoft fleſhy Pulp, ſurrounding an hard oblong Stone, for the moſt part pointed: to which ſhould be added, The Footſtalks are long and ſlender, and have but a ſingle Fruit upon each.

The *Species* are;

1. Prunus *fructu parvo præcoci. Tourn.* The Jean-hâtive, or White Primordian. This is a ſmall longiſh white Plum, of a clear yellow Colour, cover'd over with a white Flew, which eaſily wipes off. The Juice is ſweet; is a pretty good Bearer; and, for its coming very early, one Tree may be allowed to have a Place in every good Garden of Fruit. This ripens the Beginning of *July*, but ſoon becomes mealy.

2. Prunus *fructu magno craſſo ſubacido. Tourn.* Damas noir hâtive, *i. e.* the early black Damaſk, commonly called The *Morocco* Plum. This is a pretty large Plum, of a round Shape, divided with a Furrow in the Middle (like Peaches); the Outſide is of a dark-black Colour, covered with a light-violet Bloom; the Fleſh is yellow, and parts from the Stone. It ripens in the Middle of *July*, and is eſteem'd for its Goodneſs.

3. Prunus *fructu parvo dulci atro cæruleo. Tourn.* The little black Damaſk Plum. This is a ſmall black Plum, cover'd over with a violet Bloom; the Juice is richly ſugar'd; the Fleſh parts from the Stone; and it is a good Bearer. Ripe the Middle of *July*.

4. Prunus *fructu magno dulci atro-cæruleo. Tourn.* Gros Damas Violet de Tours, *i. e.* Great Damaſk Violet of *Tours*. This is a pretty large Plum, inclining to an oval Shape; the Outſide is of a dark Blue, cover'd with a violet Bloom; the Juice is richly ſugar'd, the Fleſh is yellow, and parts from the Stone. Ripe the Middle of *July*.

5. Prunus *fructu rotundo atro-rubente.* The *Orleans* Plum. The Fruit is ſo well known to almoſt every Perſon, that it is needleſs to deſcribe it; is a very plentiful Bearer, which has occaſion'd its being ſo

generally planted by thoſe Perſons who ſupply the Markets with Fruit; but it is an indifferent Plum.

6. Prunus *fructu oblongo atro-rubente.* The *Fotheringham* Plum. This Fruit is ſomewhat long, deeply furrow'd in the Middle; the Fleſh is firm, and parts from the Stone; the Juice is very rich. This ripens about the Middle of *July*.

7. Prunus *fructu nigro, carne dura. Tourn.* The Perdrigon Plum. This is a middle-ſiz'd Plum, of an oval Shape: the Outſide is of a very dark Colour, cover'd over with a violet Bloom: the Fleſh is firm, and full of an excellent rich Juice: this is greatly eſteem'd by the Curious. Ripe the Latter-end of *July*.

8. Prunus *fructu magno e violaceo rubente ſuaviſſimo ſaccharato. Tourn.* The violet Perdrigon Plum. This is a large Fruit, rather round than long, of a bluiſh red Colour on the Outſide: the Fleſh is of a yellowiſh Colour, pretty firm, and cloſely adheres to the Stone: the Juice is of an exquiſite rich Flavour. This ripens the End of *July*.

9. Prunus *fructu ovato ex albo flaveſcente.* The white Perdrigon Plum. This is a middling Plum, of an oblong Figure: the Outſide is yellow, covered with a white Bloom: the Fleſh is firm, and well-taſted: it is a very good Fruit to eat raw, or for Sweet-meats, having an agreeable Sweetneſs mixed with an Acidity.

10. Prunus *fructu ovato magno rubente. Tourn.* The red Imperial Plum, ſometimes call'd the Red Bonum Magnum. This is a large oval-ſhap'd Fruit, of a deep-red Colour, cover'd with a fine Bloom: the Fleſh is very dry, and very indifferent to be eaten raw; but is excellent for making Sweet-meats: this is a great Bearer. Ripe the End of *July*.

11. Prunus *fructu ovato magno flaveſcente. Tourn.* White Imperial Bonum Magnum; white Holland or Mogul Plum. This is a large oval-ſhap'd Fruit, of a yellowiſh Colour, powdered over with a white Bloom: the Fleſh is firm, and adheres cloſely to the Stone: the Juice is of an acid Taſte, which renders it unpleaſant to be eaten raw; but it is very good for Baking, or Sweet-meats: it is a great Bearer, and is ripe towards the End of *Auguſt*.

12. Prunus *fructu ovato cæruleo.* The Cheſton Plum. This is a middle-ſiz'd Fruit, of an oval Figure; the Outſide is of a dark Blue, powder'd over with a violet Bloom; the Juice is rich, and it is a great Bearer. Ripe the End of *July*.

13. Prunus *fructu maximo rotundo flavo & dulci. Tourn.* Prune d'Abricot, *i. e.* The Apricot-plum. This is a large round Fruit of a yellow Colour on the Outſide, powder'd over with a white Bloom; the Fleſh is firm and dry, of a ſweet Taſte, and comes clean from the Stone. This ripens the End of *July*.

14. Prunus *fructu ſubrotundo, ex rubro & flavo mixto.* The Maître Claud. Although this Name is applied to this Fruit, yet it is not what the *French* ſo call. This is a middle-ſiz'd Fruit, rather round than long, of a fine mix'd Colour, between Red and Yellow; the Fleſh is firm, and parts from the Stone, and has a delicate Flavour. Ripe the End of *July*.

15. Prunus *fructu rubente dulciſſimo. Tourn.* La Rochecourbon, or Diaprée rouge, *i. e.* the red Diaper Plum. This is a large round Fruit, of a rediſh Colour, powder'd over with a violet Bloom; the Fleſh adheres cloſely to the Stone, and is of a very high Flavour. Ripe in the Beginning of *Auguſt*.

16. Prunus *fructu rotundo flaveſcente.* La petite Reine Claude, *i. e.* Queen Claudia. This is a ſmall round Fruit, of a whitiſh-yellow Colour, powder'd over with a pearl-colour'd Bloom; the Fleſh is firm and thick, quits the Stone, and its Juice is richly ſugar'd. Ripe the Middle of *Auguſt.*

17. Prunus *fructu rotundo nigro-purpureo majori dulci. Tourn.* Myrobalan Plum. This is a middle-ſiz'd Fruit, of a round Shape; the Outſide is a dark Purple, powder'd over with a violet Bloom; the Juice is very ſweet. It is ripe the Middle of *Auguſt.*

18. Prunus *fructu rotundo e viridi flaveſcente, carne dura, ſuaviſſimo.* La groſſe Reine Claude, *i. e.* the large Queen Claudia, by ſome the Dauphiny. At *Tours* it is call'd the Abricot verd, *i. e.* Green Apricot: at *Rouen,* Le verte bonne, *i. e.* the good Green: and in other Places, Damas verd, *i. e.* Green Damaſk, or Tromp-valet, the Servants Cheat. This is one of the beſt Plums in *England*; it is of a middle Size, round, and of a yellowiſh-green Colour on the Outſide; the Fleſh is firm, of a deep-green Colour, and parts from the Stone; the Juice has an exceeding rich Flavour, and it is a great Bearer. Ripe the Middle of *Auguſt.* This Plum is confounded by moſt People in *England,* by the Name of Green Gage; but this is the Sort which ſhould be choſen, although there are three or four different Sorts of Plums generally ſold for it, one of which is ſmall, round, and dry: this quits the Stone, and is later ripe, ſo not worth preſerving.

19. Prunus *fructu amygdalino. Tourn.* Rognon de Coq, *i. e.* Cock's Teſticles. This is an oblong Fruit, deeply furrow'd in the Middle, ſo as to reſemble the Teſticles; it is of a whitiſh Colour on the Outſide, ſtreak'd with Red; the Fleſh of it adheres firmly to the Stone, and it is late ripe.

20. Prunus *fructu rotundo flavo dulciſſimo.* Drap d'Or, *i. e.* the Cloth of Gold Plum. This is a middle-ſiz'd Fruit, of a bright-yellow Colour, ſpotted or ſtreak'd with red on the Outſide; the Fleſh is yellow, and full of an excellent Juice. It is a plentiful Bearer, and ripens about the Middle of *Auguſt.*

21. Prunus *fructu cerei coloris. Tourn.* Prune de Sainte Catharine, *i. e.* St. Catharine Plum. This is a large oval-ſhap'd Fruit, ſomewhat flat; the Outſide is of an Amber Colour, powder'd over with a whitiſh Bloom; but the Fleſh is of a bright-yellow Colour, is dry and firm, adheres cloſely to the Stone, and has a very agreeable ſweet Taſte. This ripens at the End of *Auguſt,* and is very ſubject to dry upon the Tree, when the Autumn proves warm and dry. This makes fine Sweetmeats, and is a plentiful Bearer.

22. Prunus *fructu ovato rubente dulci.* The Royal Plum. This is a large Fruit of an oval Shape, drawing to a Point next the Stalk; the Outſide is of a light-red Colour, powder'd over with a whitiſh Bloom; the Fleſh adheres to the Stone, and has a fine ſugary Juice. This ripens the End of *Auguſt.*

23. Prunus *fructu parvo ex viridi flaveſcente. Tourn.* La Mirabelle. This is a ſmall round Fruit, of a greeniſh-yellow on the Outſide; the Fleſh parts from the Stone, is of a bright-yellow Colour, and has a fine ſugary Juice. This is a great Bearer, ripens the Beginning of *Auguſt,* and is excellent for Sweetmeats.

24. Prunus *Brigonienſis, fructu ſuaviſſimo. Tourn.* Prune de Brignole; *i. e.* The Brignole Plum.

This is a large oval-ſhap'd Fruit, of a yellowiſh Colour, mix'd with Red on the Outſide; the Fleſh is of a bright-yellow Colour, is dry, and of an excellent rich Flavour. This ripens the Middle of *Auguſt*, and is eſteem'd the beſt Plum for Sweetmeats yet known.

25. Prunus *fructu magno e violaceo rubente ſerotino. Tourn.* Imperatrice, *i. e.* The Empreſs. This is a large round Fruit, of a violet-red Colour, very much powder'd with a whitiſh Bloom; the Fleſh is yellow, cleaves to the Stone, and is of an agreeable Flavour. This ripens about the Middle of *September*.

26. Prunus *fructu ovato maximo flavo. Tourn.* Prune de Monſieur, *i. e.* The Monſieur Plum. This is ſometimes call'd the *Wentworth* Plum. It is a large oval ſhap'd Fruit, of a yellow Colour both within and without, very much reſembling the *Bonum Magnum*; but the Fleſh of this parts from the Stone, which the other doth not. This ripens toward the Latter-end of *Auguſt*, and is very good to preſerve; but the Juice is too ſharp to be eaten raw: it is a great Bearer.

27. Prunus *fructu majori rotundo rubro. Tourn.* Prune Cerizette, *i. e.* The Cherry Plum. This Fruit is commonly about the Size of the Ox-heart Cherry, is round, and of a red Colour; the Stalk is long, like that of a Cherry, which this Fruit ſo much reſembles, as not to be diſtinguiſh'd therefrom at ſome Diſtance. The Bloſſoms of this Tree come out very early in the Spring, and, being tender, are very often deſtroy'd by Cold; but it affords a very agreeable Proſpect in the Spring; for theſe Trees are generally cover'd with Flowers, which open about the ſame time as the Almonds; ſo that when they are intermix'd therewith, they make a beautiful Appearance before many other Sorts put out: but by this bloſſoming ſo early, there are few Years that they have much Fruit.

28. Prunus *fructu albo oblongiuſculo acido. Tourn.* The white Pear-plum. This is a good Fruit for Preſerving; but is very unpleaſant, if eaten raw; it is very late ripe, and ſeldom planted in Gardens, unleſs for Stocks to bud ſome tender Sorts of Peaches upon; for which Purpoſe it is eſteem'd the beſt amongſt all the Sorts of Plums.

29. Prunus *Mytellinum. Park.* The Muſcle-plum. This is an oblong flat Plum, of a dark-red Colour; the Stone is large, and the Fleſh but very thin, and not well-taſted, ſo that its chief Uſe is for Stocks, as the former.

30. Prunus *fructu parvo violaceo.* The St. Julian Plum. This is a ſmall Fruit, of a dark-violet Colour, powder'd over with a mealy Bloom; the Fleſh adheres cloſely to the Stone, and in a fine Autumn will dry upon the Tree. The chief Uſe of this Plum is for Stocks, to bud the more generous Kinds of Plums and Peaches upon; as alſo for the *Bruxelles* Apricot, which will not thrive ſo well upon any other Stock.

31. Prunus *ſylveſtris major. J. B.* The black Bullace-tree. This grows wild in the Hedges in divers Parts of *England*, and is rarely cultivated in Gardens.

32. Prunus *ſylveſtris, fructu majore albo. Raii Syn.* The white Bullace-tree. This grows wild, as the former, and is ſeldom cultivated in Gardens.

33. Prunus *ſylveſtris. Ger. Emac.* The Black-thorn, or Sloe-tree. This is very common in the Hedges almoſt every-where: the chief Uſe of this Tree is to plant for Hedges, as

White-thorn, *&c.* and, being of quick Growth, is very proper for that Purpoſe.

All the Sorts of Plums are propagated by budding or grafting them upon Stocks of the Muſcle, White Pear, St. Julian, Bonum Magnum, or any other Sorts of free-ſhooting Plums. The manner of raiſing theſe Stocks hath been already exhibited under the Article of Nurſeries; therefore need not be repeated again in this Place: but I would obſerve, that Budding is much preferable to Grafting for theſe Sorts of Fruit-trees, which are very apt to gum, where-ever there are large Wounds made on them.

The Trees ſhould not be more than a Year's Growth from the Bud, when they are tranſplanted; for if they are older, they ſeldom ſucceed ſo well, being very ſubject to canker; or, if they take well to the Ground, commonly produce only two or three luxuriant Branches; therefore it is much more adviſeable to chooſe young Plants.

The manner of preparing the Ground (if for Walls) is the ſame as for Peaches; as is alſo the pruning the Roots, and planting; and therefore I ſhall forbear repeating it again. The Diſtance which theſe Trees ſhould be planted at, muſt not be leſs than twenty, or twenty-four Feet; and if the Wall is low, they ſhould be placed thirty Feet aſunder.

Plums ſhould have a middling Soil, neither too wet and heavy, nor over-light and dry; in either of which Extremes they ſeldom do ſo well: and thoſe Sorts which are planted againſt Walls, ſhould be placed to an Eaſt or South-eaſt Aſpect; which is more kindly to theſe Fruits than a full South Aſpect, on which they are ſubject to ſhrivel, and be very dry; and many Sorts will be extreme mealy, if expos'd too much to the Heat of the Sun; but moſt Sorts will ripen extremely well on Eſpaliers, if rightly manag'd.

There are ſome Perſons who plant Plums for Standards, in which Method ſome of the ordinary Sorts will bear very well; but then the Fruit will not be near ſo fair as thoſe produç'd on Eſpaliers, and will be more in Danger of being bruiſed, or blown down, by ſtrong Winds. The Diſtance of placing them for Eſpaliers muſt be the ſame as againſt Walls; as muſt alſo their Pruning and Management; ſo that whatever may be hereafter mention'd for one, ſhould be likewiſe underſtood for both.

Plums do not only produce their Fruit upon the laſt Year's Wood, but alſo upon Curſons or Spurs, which come out of Wood that is many Years old; ſo that there is not a Neceſſity of ſhortening the Branches, in order to obtain new Shoots annually in every Part of the Tree (as in Peaches, Nectarines, *&c.* hath been directed), ſince the more theſe Trees are pruned, the more luxuriant they grow, until the Strength of them is exhauſted, and then they gum and ſpoil: therefore the ſafeſt Method to manage theſe Trees is, to lay in their Shoots horizontally, as they are produced, at equal Diſtances, in proportion to the Length of their Leaves; and where there is not a ſufficient Quantity of Branches to fill up the Vacancies of the Tree, there the Shoots may be pinch'd the Beginning of *May* (in the manner as hath been directed for Peaches, *&c.*); which will cauſe them to produce ſome lateral Branches to ſupply thoſe Places; and during the growing Seaſon, all fore-right Shoots ſhould be diſplaced; and ſuch as are to remain muſt be regularly train'd in to the

Wall or Eſpalier; which will not only render them beautiful, but alſo give to each an equal Advantage of Sun and Air: and hereby the Fruit will be always kept in a ductile, growing State; which they ſeldom are, when overſhaded with Shoots ſome Part of the Seaſon, and then ſuddenly expoſed to the Air, by the taking off or training thoſe Branches in their proper Poſition.

With thus carefully going over theſe Trees in the growing Seaſon, there will be but little Occaſion for cutting them in Winter; which (as I before have ſaid) is of ill Conſequence to all Sorts of Stone-fruit; for when the Branches are ſhorten'd, the Fruit is cut away, and the Number of Shoots increas'd: ſo whereever a Branch is ſhorten'd, there are commonly two or more Shoots produc'd from the Eyes immediately below the Cut; and by thus unſkilfully Pruning, many Perſons croud their Trees with Branches, and thereby render what little Fruit the Trees produce, very ſmall and ill-taſted; which is very commonly found in too many Gardens, where the Manager, perhaps, thinks himſelf a complete Maſter of his Buſineſs. For nothing is more common, than to ſee every Branch of a Fruit-tree paſs the Diſcipline of the Knife, however agreeable it be to the ſeveral Sorts of Fruits. And it is common to ſee theſe Trees planted at the Diſtance of fourteen or ſixteen Feet, ſo that the Walls are in a few Years cover'd with Branches; and then all the Shoots are cut and mangled with the Knife, ſo as to appear like a ſtumped Hedge, and produce little Fruit: therefore the only way to have Plum-trees in good Order, is to give them room, and extend their Branches at full Length.

Thoſe few Rules, before laid down, will be ſufficient, if due Obſervation be join'd therewith, to inſtruct any Perſon in the right Management of theſe Sort of Fruit-trees; therefore I ſhall not ſay any more on that Subject, leſt, by multiplying Inſtructions, it may render it more obſcure to a Learner.

PSEUDOACACIA. *Vide* Robinia.

PSYLLIUM, Fleawort.

The *Characters* are;

This Plant agrees with Plantain and Buckſhorn-plantain in every reſpect, excepting that this riſes up with lofty Stalks, and divides into many Branches; whereas both the others produce their Flowers upon naked Pedicles.

The *Species* are;

1. Psyllium *majus erectum. C. B. P.* Greater upright Fleawort.
2. Psyllium *majus ſupinum. C. B. P.* Greater Fleawort, whoſe Branches ſpread to the Ground.
3. Psyllium *Indicum, foliis crenatis. J. B. Indian* Fleawort, with notched Leaves.

There are ſeveral other Varieties of theſe Plants, diſtinguiſh'd by Writers in Botany: but ſince they are of little Uſe or Beauty, I ſhall paſs them by without naming.

Theſe Plants may be propagated by ſowing their Seeds in the Spring, on a Bed of light Earth; and when they are come up, they ſhould be clear'd from Weeds; pulling out at the ſame time ſome of the Plants, where they ſtand too cloſe, leaving the remaining ones about eight or nine Inches aſunder: after which they will require no farther Care, but to clear them from Weeds; and in *July* they will flower, and their Seeds will ripen in Autumn.

The ſecond Sort will abide two or

three Years, provided the Plants are on a poor dry Soil; but the other two Sorts periſh every Year.

The firſt Sort, which is the moſt common, is uſed in Medicine; but the other two are never uſed in *England*.

PTARMICA, Sneezwort.

The *Characters* are;

It hath radiated Flowers, whoſe Diſk conſiſts of many Florets; but the Borders are compoſed of Half-florets: the Embryoes are lodg'd in the Flower-cup, which is ſcaly, each of which becomes one ſlender Seed.

The *Species* are;

1. PTARMICA *vulgaris, folio longo ſerrato, flore albo. J. B.* Common Sneezwort, with a long ſerrated Leaf, and white Flower.

2. PTARMICA *vulgaris, flore pleno. Cluſ. Hiſt.* Common Sneezwort, with a double Flower, by ſome called Double Pellitory.

3. PTARMICA *foliis profundis ſerratis, late viridibus, elatior. H. L.* Taller Sneezwort, with broad green Leaves deeply ſerrated.

4. PTARMICA *Alpina, incanis ſerratis foliis. H. L. Alpine* Sneezwort, with hoary ſerrated Leaves.

5. PTARMICA *incana, pinnulis criſtatis. T. Cor.* Hoary Sneezwort, with creſted Leaves.

6. PTARMICA *incana humilis, foliis laciniatis, abſinthii æmulis. H. L.* Dwarf hoary Sneezwort, with jagged Leaves, reſembling Wormwood.

7. PTARMICA *Alpina, foliis anguſtis, partim ſerratis, partim integris. Bocc. Muſ. Alpine* Sneezwort, with narrow Leaves, Part of which are ſawed on their Edges, and the other Part are whole.

8. PTARMICA *Cretica fruteſcens, ſantolinæ facie. Inſt. R. H.* Shrubby Sneezwort of *Crete*, with the Appearance of Lavender-cotton.

9. PTARMICA *Orientalis, foliis criſtatis. Tourn. Cor.* Eaſtern Sneezwort, with creſted Leaves.

10. PTARMICA *Orientalis, foliis criſtatis longioribus, & capitulis majoribus. Tourn. Cor.* Eaſtern Sneezwort, with longer creſted Leaves, and larger Heads.

11. PTARMICA *Orientalis, ſantolinæ folio, flore majore. Tourn. Cor.* Eaſtern Sneezwort, with a Lavender-cotton-leaf, and a larger Flower.

12. PTARMICA *Orientalis, ſantolinæ folio, flore minore. Tourn. Cor.* Eaſtern Sneezwort, with a Lavender-cotton-leaf, and a ſmaller Flower.

13. PTARMICA *Orientalis, foliis tanaceti incanis, flore aureo. Tourn. Cor.* Eaſtern Sneezwort, with hoary Tanſey-leaves, and a golden Flower.

14. PTARMICA *Orientalis, foliis tanaceti incanis, ſemifloſculis florum pallide luteis. Tourn. Cor.* Eaſtern Sneezwort, with hoary Tanſey-leaves, whoſe Half-florets are of a pale-yellow Colour.

15. PTARMICA *Orientalis, foliis tanaceti incanis, ſemifloſculis florum brevioribus. Tourn. Cor.* Eaſtern Sneezwort, with hoary Tanſey-leaves, whoſe Half-florets are very ſhort.

16. PTARMICA *Orientalis, ſantolinæ folio, radice repente.* Eaſtern Sneezwort, with a Lavender-cotton-leaf, and a creeping Root.

17. PTARMICA *Orientalis, tanaceti folio & facie, flore minimo. Tourn. Cor.* Eaſtern Sneezwort, with the Leaf and Face of Tanſey, and the leaſt Flower.

18. PTARMICA *Orientalis incana, foliis pennatis, ſemifloſculis florum vix conſpicuis. Tourn. Cor.* Hoary Eaſtern Sneezwort, with winged Leaves, and the Half-florets ſcarcely diſcernible.

19. PTARMICA *Orientalis, foliis argenteis conjugatis. Tourn. Cor.* Eaſt-

ern Sneezwort, with ſilver conjugated Leaves.

All theſe Sorts of Ptarmica are hardy enough to endure the Cold of our ordinary Winters in the open Air, provided they are planted in a dry lean Soil; for when they are in a moiſt rich Soil, they grow very luxuriant in the Summer, and are filled with Juice; which renders them leſs capable to reſiſt the Cold, than when they are more ſtinted and woody; and they make a much better Appearance, when they grow ſlowly, than if they were greatly encouraged in their Growth; becauſe they appear more hoary, and produce a greater Number of Flowers.

The firſt of theſe Plants is very common upon Heaths, and in ſhady Places, in divers Parts of *England*; but is rarely cultivated in Gardens. This is the Sort directed for medicinal Uſe in the College Diſpenſatory.

The ſecond Sort is a Variety of the firſt, which was accidentally obtain'd: the Flowers of this Kind are very double, and generally produced in large Bunches; which, together with its long Continuance in Flower, renders it worthy of a Place in every good Garden. This Sort propagates itſelf very faſt by its Roots, which ſpread very far under-ground; ſo that it ſhould not be planted too near other Plants, leſt it over-run and deſtroy them.

The beſt time to tranſplant theſe Roots is in Autumn, that they may take Root before Winter: ſo that they will be in no Danger of ſuffering from Drought the Spring following; and will be capable of producing ſtronger Stalks, and a greater Quantity of Flowers.

This Plant always makes the beſt Appearance when its Roots are confin'd; becauſe, when they are ſuffer'd to ſpread, the Stalks come up thin and ſtraggling; and the greateſt Beauty of it is, to ſee it grow cloſe in large Tufts: for which Reaſon many Perſons chooſe to plant it in Pots fill'd with light ſandy Earth; in which, if they are duly water'd in dry Weather, they will thrive exceedingly, and make a very handſome Appearance. It is alſo very proper to plant on ſuch Borders as are gravelly and poor (on which few other things will thrive), where the Roots of this Plant will be confin'd, more than if planted in a better Soil, and they will flower very well.

The third and fourth Sorts are ſeldom preſerv'd in Flower-gardens, being Plants of little Beauty: theſe may be propagated by parting their Roots, either in Spring or Autumn, and will grow upon almoſt any Soil, or in any Situation.

The fifth Sort was brought from the *Levant* by Monſ. *Tournefort*; but was known long before. Many of the old Botaniſts were of Opinion, that the Seeds of this Plant were the *Semen Santonicum* of the Shops; but it is now generally believ'd to be the Seeds of ſome other Plant of this Kind: but however, this Plant deſerves a Place in every good Garden, for the Variety of its ſilver-colour'd Leaves, together with its long Continuance in Flower.

It may be propagated by planting Cuttings during any of the Summer-months, upon a Bed of light Earth, obſerving to water and ſhade them until they have taken Root: after which they will require no farther Care, but only to clear them from Weeds, until *September* following, when they ſhould be carefully taken up, preſerving a Ball of Earth to the Roots of each Plant, and planted in a warm dry Situation: and if it be on a poor gravelly or rubbiſhing

Soil, they will endure the Cold better, and make much more beautiful Plants: this Sort ſeldom perfects Seeds in *England.*

The other Sorts are all (except the ſixteenth) propagated by Cuttings in the Summer-months; which ſhould be planted in a ſhady Border of freſh Earth, and muſt be conſtantly watered, until they have taken Root; after which time they will require no farther Care but to keep them clear from Weeds, until *Michaelmas*, when they ſhould be carefully taken up, and tranſplanted where they are deſign'd to remain; which muſt be done ſo early in the Autumn, that they may have time to get good Roots before the Froſt comes on, otherwiſe they will be in Danger of ſuffering. The ſixteenth Sort propagates greatly by its creeping Roots, therefore requires to be confin'd; otherwiſe it will ſpread, and intermix with whatever Plants grow near it. This is alſo a very hardy Plant; but being of humble Growth, makes no very good Figure in a Garden; ſo is ſeldom preſerv'd, but by thoſe Perſons who are curious in Botany, for the ſake of Variety.

Although theſe Plants do not produce very beautiful Flowers, yet they may be diſpoſed in large Gardens, ſo as to make a very agreeable Diverſity; for their hoary Leaves of different Shapes, when intermixed with other hardy Plants of the ſame Growth, on ſmall Hillocks, will have a pretty Effect; and as they retain their Leaves all the Winter, at that Seaſon they add to the Variety: and in Summer, when their Flowers are produced, they alter the Proſpect ſo as to be very agreeable.

They are all of them low Plants; the talleſt and moſt ſhrubby of them ſeldom riſes above two Feet high, and the others not half ſo high; ſo that they ſhould not be mixed with larger Plants, becauſe thoſe would overbear and deſtroy them. When theſe Plants are well rooted, they require no other Culture, but to keep them clear from Weeds; for their Roots will abide many Years, provided they are not deſtroyed by very ſevere Froſts, which ſeldom happen in *England.*

PTELEA, *Carolina* Shrub-trefoil.

The *Characters* are;

The Empalement of the Flower is one Leaf, cut into four acute Segments: the Flower is compoſed of four Petals, which ſpread open: in the Centre is placed the Pointal, which is flat and round, and is attended by four Stamina, *each crown'd with roundiſh Summits: the Pointal afterward changes to a roundiſh membranaceous Fruit, like that of the Elm, in which is contained one taper Seed.*

We have but one *Species* of this Genus; *viz.*

PTELEA. *Hort. Cliff. Carolina* Shrub-trefoil.

This Shrub was firſt taken notice of by Mr. *Baniſter*, who found it growing in *Virginia*, and mentions it in his Catalogue of Plants, by the Name of *Frutex Virginianus trifolius, ulmi ſamarris.* It hath ſince been found in plenty on the upper Part of the *Savannah* River, in *Carolina*, where the Shrubs grow to the Height of twelve or fourteen Feet. In *England* there are many of theſe Shrubs, which are upward of ten Feet high, and produce plenty of Flowers every Year. The Flowers are white, and grow in large Bunches at the Ends of the Shoots; theſe are ſucceeded by the membranaceous Seeds, which fall away, and never ripen here. There were ſome pretty large Shrubs of this Kind in ſome curious Gardens, which were deſtroyed in the ſevere Winter in 1749-50.; but they are ſo hardy, as to reſiſt the Cold of our ordinary Winters very well in the open Air.

Theſe Shrubs may be propagated by Cuttings, which ſhould be planted in Pots of freſh rich Earth, and plung'd into a moderate Hot-bed. The beſt time for planting them is in the Beginning of *March*; but they muſt be carefully manag'd, ſo as not to have too much Heat, and ſhaded from the Sun in the Middle of the Day, otherwiſe they will not ſucceed. They may alſo be propagated by Layers; but theſe ſhould be duly water'd, otherwiſe they will not take Root: but if good Seeds can be procur'd from abroad, the Plants raiſed from thoſe will be much ſtronger, than thoſe which are propagated by either of the former Methods.

Theſe Seeds may be ſown the Beginning of *April*, on a Bed of light Earth, in a warm-ſhelter'd Situation; where, if the Ground is moiſten'd in dry Weather, the Plants will come up in five or ſix Weeks: but if the Seeds are ſown in Pots, and placed on a very moderate Hot-bed, the Plants will come up ſooner, and make greater Progreſs the firſt Year: but they muſt not be forc'd or drawn, for that will make them very tender; therefore in *June* the Plants ſhould be expos'd to the open Air, in a ſhelter'd Situation, where they may remain till the Froſt comes on; when thoſe in the Pots ſhould be either placed under a common Frame, to ſhelter them from ſevere Froſt; or the Pots plung'd into the Ground, near an Hedge, that the Froſt may be prevented from penetrating through the Sides of the Pots to the Roots of the Plants. The following Spring the Plants may be planted into a Nurſery-bed, at about one Foot Diſtance, where they may grow two Years; by which time they will be fit to tranſplant where they are deſigned to remain.

PULEGIUM, Penyroyal, or Pudden-graſs.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, whoſe upper Lip (or Creſt) is intire; but the lower Lip (or Beard) is divided into three Parts: out of the Flower-cup riſes the Pointal, attended by four Embryoes, which afterward become ſo many Seeds: to which may be added, That the Flowers grow in ſhort thick Whorles.

The *Species* are;

1. PULEGIUM *latifolium*. *C. B. P.* Common, or Broad-leav'd Penyroyal.

2. PULEGIUM *Hiſpanicum erectum, ſtaminibus florum extantibus*. Upright *Spaniſh* Penyroyal, whoſe *Stamina* ſtand out from the Flowers.

3. PULEGIUM *anguſtifolium*. *C. B. P.* Narrow-leav'd Penyroyal.

4. PULEGIUM *anguſtifolium, flore albo*. *H. R. Pin.* Narrow-leav'd Penyroyal, with a white Flower.

The firſt of theſe Plants is very common on moiſt Heaths in divers Parts of *England*: this is the Sort recommended by the Phyſicians for medicinal Uſe. But the ſecond Sort, although not a Native of *England*, hath ſo much obtain'd in the Gardens where medicinal Plants are cultivated, as to have quite ſuperſeded the other in the Markets, for its upright Growth, early Flowering, and more beautiful Appearance: but whether it is equally good for Uſe, I ſhall leave to thoſe to whoſe Province it more immediately belongs to examine.

The third Sort is alſo recommended to be uſed in Medicine: this is not of *Engliſh* Growth; but is very hardy, and will thrive very well, if planted on a moiſt Soil; as will alſo the fourth Sort, which is only a Variety of the third, from which it differs in nothing but the Colour of its Flowers.

All theſe Plants propagate themſelves very faſt by their Branches trailing upon the Ground, which emit Roots at every Joint, and faſten themſelves into the Earth, and ſend forth new Branches; ſo that no more is required in their Culture, than to cut off any of theſe rooted Branches, and plant them out in freſh Beds; allowing them at leaſt a Foot from Plant to Plant every Way, that they may have room to grow.

The beſt time for this Work is in *September*, that the Plants may be rooted before Winter; for if the old Roots are permitted to remain ſo cloſe together, as they generally grow in the Compaſs of a Year, they are ſubject to rot in Winter: beſides, the young Plants will be much ſtronger, and produce a larger Crop the ſucceeding Summer, than if they were removed in the Spring: theſe Plants all love a moiſt ſtrong Soil, in which they will flouriſh exceedingly.

PULMONARIA, Lungwort.

The *Characters* are;

The Flower conſiſts of one Leaf, which is ſhaped like a Funnel, whoſe upper Part is cut into ſeveral Segments: from the fiſtulous Flower-cup, which is for the moſt part, pentagonal, riſes the Pointal, encompaſſed by four Embryoes, which afterward become ſo many Seeds incloſed in the Flower-cup.

The *Species* are;

1. Pulmonaria *vulgaris, maculoſo folio. Cluſ. Hiſt.* Common ſpotted Lungwort, by ſome call'd Sage of *Jeruſalem*, and *Jeruſalem* Cowſlip.

2. Pulmonaria *major, non maculoſa. J. B.* Greater Lungwort, without Spots.

3. Pulmonaria *foliis echii. Lob. Ic.* Lungwort with Leaves like Vipers Bugloſs.

4. Pulmonaria *maxima, foliis quaſi ſaccharo incruſtatis. Pluk. Phyt.* Greateſt Lungwort, with Leaves very much ſpotted.

5. Pulmonaria *vulgaris latifolia, flore albo. Inſt. R. H.* Common broad-leav'd Lungwort, with a white Flower.

6. Pulmonaria *Alpina, foliis mollibus ſubrotundis, flore cæruleo. Inſt. R. H. Alpine* Lungwort, with ſoft roundiſh Leaves, and a blue Flower.

7. Pulmonaria *anguſtifolia, cæruleo flore. J. B.* Narrow-leav'd Lungwort, with a blue Flower.

8. Pulmonaria *Alpina, anguſto folio, Italica. Bocc. Muſ.* Narrow-leav'd *Alpine* Lungwort.

9. Pulmonaria *mitis, fragariæ odore. Bocc. Muſ.* Mild Lungwort ſmelling like Strawberries.

10. Pulmonaria *Cretica annua, calyce veſicario. Inſt. R. H.* Annual Lungwort of *Candy*, with a bladdered Flower-cup.

11. Pulmonaria *viridi, ſubrotundo, non maculato folio. Bocc. Muſ.* Green Lungwort, with a roundiſh unſpotted Leaf.

12. Pulmonaria *Chia, echii folio verrucoſa, calyce veſicario, flore albo. Tourn. Cor.* Lungwort of the Iſland of *Scio*, with a warted Vipers-bugloſs-leaf, a bladdered Flower-cup, and a white Flower.

13. Pulmonaria *Leſbia, echii folio verrucoſo, calyce veſicario, flore cæruleo. Tourn. Cor.* Lungwort of *Leſbos*, with a warted Viper-bugloſs-leaf, a bladdered Flower-cup, and a blue Flower.

14. **Pulmonaria** *Orientalis, calyce veſicario, foliis echii, flore purpureo infundibuliformi. Tourn. Cor.* Eaſtern Lungwort, with a bladdered Flower-cup, a Vipers-bugloſs-leaf, and a purple funnel ſhap'd Flower.

15. **Pulmonaria** *Orientalis, calyce veſicario, foliis echii, flore albo infundibuliformi. Tourn. Cor.* Eaſtern Lungwort, with a bladdered Flower-cup, a Vipers-bugloſs-leaf, and a white funnel-ſhap'd Flower.

16. **Pulmonaria** *calyce tubo corolla breviore, perianthiis quinquepartitis. Flor. Virg.* *American* Lungwort, with a ſhort Flower-cup, which is cut into fiveSegments, called in *America*, Mountain Cowſlip.

The firſt Sort is uſed in Medicine as a vulnerary Herb, but is by many People preſerv'd in Gardens; as are alſo the three other Sorts for the Variety of their ſpotted Leaves, and pretty Bunches of blue Flowers.

The firſt, ſecond, third, fourth, fifth, ſixth, ſeventh, eighth, and ninth Sorts are abiding Plants,which may be propagated by parting of their Roots. The beſt time for doing of this is in Autumn, that they may be rooted before the Froſt comes on. They ſhould have a ſhady Situation, and a freſh undung'd Soil; in which they will thrive better than on a rich Soil.

Theſe Plants may be cultivated by parting of their Roots; which may be done either in the Spring or Autumn; but if the Ground be moiſt, into which they are planted, it is better to be done in the Spring; otherwiſe the Autumn is the moſt preferable Seaſon, that the Plants may be well rooted before the dry Weather comes on in the Spring, which will cauſe them to flower much ſtronger.

The Soil in which they are planted ſhould not be rich; but rather a freſh light ſandy Ground, in which they will thrive much better than in a richer Soil, in which they are very ſubject to rot in Winter.

The fourth Sort makes the beſt Appearance of all the Kinds, and is very hardy; will grow either in Sun or Shade; and, taking up little room, is worthy of a Place in every good Garden for the ſake of Variety.

The ſixteenth Sort is a Native of *America*, and is found in moſt Parts of North *America*. The Seeds of this Plant were formerly ſent over from *Virginia*, by Mr. *Baniſter*: theſe were ſown in the Garden of the Biſhop of *London*, at *Fulham*, and in thoſe of ſome other curious Perſons, where the Plants were ſeveral Years preſerv'd; but when the Poſſeſſors of thoſe Gardens died, the Plants being neglected were loſt; ſo that for ſeveral Years this Sort was not in *England*.

The Leaves of this Plant are ſmooth and intire; the Flowers are produced in a looſe hanging Panicle, on the Top of the Stalks: theſe have long Tubes, ſtretched out beyond the Empalement; and, being of a fine blue Colour, they make a pretty Appearance. The time of this Plant's flowering in *England* is in *May*; and if the Plants are in a ſhady Situation, the Flowers will continue a Month in Beauty.

The Roots of this Plant are perennial, being compoſed of many thick fleſhy Tubers, ſomewhat reſembling thoſe of Comfrey. The Leaves decay every Autumn, and new ones come out early in the Spring. The Flower-ſtems uſually grow about one Foot and an half high; and the Flowers hang down much after the ſame manner as thoſe of our common ſpotted Lungwort; but theſe are very rarely ſucceeded by Seeds in this Country, which occaſions the preſent Scarcity of the Plants in *England*; for they do not propagate faſt by the Root.

This Plant ſhould be planted in a ſhady Situation, but not under the Dropping of Trees; and in dry Weather it will require to be frequently watered, otherwiſe it cannot be preſerved in this Country. In the Winter, if the Froſt ſhould prove ſevere, it will be proper to lay ſome light Covering over the Roots, to prevent the Froſt from penetrating deep into the Ground, which will be a ſure Method to preſerve them.

The other Sorts are annual, and propagated by Seeds only. The beſt time to ſow theſe is in Autumn, ſoon after they are ripe; for the Plants will reſiſt the Cold of our Winters very well; ſo will flower early the following Summer, and good Seeds may be obtained; whereas thoſe which are ſown in the Spring, ſometimes miſcarry. Theſe Seeds ſhould be ſown where they are deſign'd to remain; for the Plants do not ſucceed very well, when they are tranſplanted. When the Plants come up, they require no other Culture, but to keep them clear from Weeds; and where they are too cloſe, to thin them. If theſe Plants are permitted to ſcatter their Seeds, the Plants will come up, and be better than when they are ſown. All theſe Plants are preſerv'd by the Curious in Botany; but they have no great Beauty; ſo are not often kept in other Gardens.

PULSATILLA, Paſque-flower.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are placed in a circular Order, and expand in form of a Roſe; out of which riſes a Pointal, beſet, for the moſt part, with Chives; which afterward becomes a Fruit, in which the Seeds are gather'd, as it were, into a little Head, each ending in a ſmall Hair: to which muſt be added, Some little Leaves encompaſſing the Pedicle below the Flower, as in the Anemone; from which the Paſque-flower differs, in the Seed ending in a Tail.

The *Species* are;

1. PULSATILLA *folio craſſiore, & majore flore.* C. B. P. Paſque-flower with thicker Leaves, and a larger Flower.

2. PULSATILLA *flore violaceo duplici fimbriato. H. R. Par.* Paſque-flower with a double fringed violet-colour'd Flower.

3. PULSATILLA *flore minore nigricante.* C. B. P. Paſque-flower with a ſmaller darker Flower.

4. PULSATILLA *flore rubro obtuſo.* C. B. P. Red Paſque-flower.

5. PULSATILLA *flore albo.* C. B. P. White Paſque-flower.

6. PULSATILLA *lutea, apii hortenſis folio.* C. B. P. Yellow Paſque-flower, with a Leaf of Garden-parſley.

7. PULSATILLA *lutea Alpina hiſpidior.* C. B. P. Yellow hairy Paſque-flower of the *Alps*.

8. PULSATILLA *folio tenuius inciſo, & flore minore, ſive paluſtris.* C. B. P. Marſh Paſque-flower, with fine-cut Leaves, and a ſmaller Flower.

9. PULSATILLA *folio tenuius inciſo, ſeu paluſtris, flore dilutiore. H. R. Par.* Marſh Paſque-flower, with a fine-cut Leaf, and a paler Flower.

10. PULSATILLA *apii folio, vernalis, flore majore.* C. B. P. Spring Paſque-flower, with a Smallage-leaf, and a larger Flower.

11. PULSATILLA *apii folio, vernalis, flore minore.* C. B. P. Spring

Paſque-flower, with a Smallage-leaf, and a ſmaller Flower.

12. Pulsatilla *apii folio, autumnalis. C. B. P.* Smallage-leav'd Paſque-flower of the Autumn.

13. Pulsatilla *folio anemones ſecundæ, ſive ſubrotundo. C. B. P.* Paſque-flower with a roundiſh Flower.

14. Pulsatilla *Pyrenaica, flore albo duplici. H. R. Par.* Paſque-flower of the *Pyrenees*, with a double white Flower,

15. Pulsatilla *lutea, paſtinacæ ſylveſtris folio. C. B. P.* Yellow Paſque-flower, with a wild Parſnep-leaf.

16. Pulsatilla *Orientalis, tenuiſſime diviſa & villoſa, flore rubro. Tourn. Cor.* Eaſtern Paſque-flower, with an hairy finely divided Leaf, and a red Flower.

17. Pulsatilla *Africana, multifido flore, apii folio rigido. Raii Supp. African* Paſque-flower, with a multifid Flower, and a ſtiff Smallage-leaf.

The firſt of theſe Plants is common in divers Parts of *England*: it grows in great Plenty on *Gogmagog Hills* on the Left-hand of the Highway leading from *Cambridge* to *Haveril*, juſt on the Top of the Hill; alſo about *Hilderſham*, ſix Miles from *Cambridge*; and on *Berneck Heath* not far from *Stamford*; and on *Southrop Common* adjoining thereto; alſo on mountainous and dry Paſtures juſt by *Leadſtone Hall* near *Pontefract* in *Yorkſhire*. It flowers about the End of *March*, or the Beginning of *April*.

The other Sorts are leſs common in *England*, being all of them Natives of other Countries, and are only to be met with in ſome curious Gardens in *England*, where they are cultivated for the Beauty of their Flowers.

Theſe Plants may be propagated by Seed, which ſhould be ſown in Boxes or Pots fill'd with very light ſandy Earth; obſerving not to cover the Seeds too deep with Mould, which will prevent their riſing; for they require no more than juſt to be cover'd. Theſe Boxes ſhould be placed where they may have the morning Sun until Ten of the Clock; but muſt be ſcreen'd from it in the Heat of the Day: and if the Seaſon proves dry, the Earth ſhould be often refreſhed with Water. The beſt time for ſowing of theſe Seeds is in *July*, ſoon after they are ripe; for if they are kept till Spring, they ſeldom grow.

Theſe Boxes or Pots, in which the Seeds are ſown, ſhould remain in this ſhady Situation until the Beginning of *October*, when they ſhould be remov'd where they may enjoy the full Sun during the Winter-ſeaſon: about the Beginning of *March* the Plants will begin to appear, at which time the Boxes ſhould be again remov'd where they may have only the forenoon Sun; for if they are too much expoſed to the Heat, the young Plants will die away. They ſhould alſo be refreſhed with Water in dry Weather, which will greatly promote their Growth; and they muſt be carefully preſerved from Weeds, which, if ſuffer'd to grow amongſt them, will in a ſhort time deſtroy them.

When the Leaves of this Plant are intirely decay'd (which is commonly in *July*), you ſhould then take up all the Roots, which, being nearly of the Colour of the Ground, will be difficult to find while ſmall; therefore you ſhould paſs the Earth through a fine Wire-ſieve, which is the beſt Method to ſeparate the Roots from the Earth (but notwithſtanding all poſſible Care taken, yet there will be many ſmall Roots left; ſo that the Earth ſhould either be put into the Boxes again, or ſpread upon a Bed of light Earth to ſee what Plants will ariſe out of it the ſucceeding Year): the Roots, being taken up, ſhould be immediately planted again on Beds of freſh light ſandy Earth, about three or four Inches aſunder, covering them about three Inches thick with the ſame light Earth. The Spring following, moſt of theſe Plants will produce Flowers; but they will not be ſo large and fair as in the ſucceeding Years, when the Roots are larger.

The Roots of theſe Plants generally run down deep in the Ground, and are of a fleſhy Subſtance, ſomewhat like Carrots: ſo will not bear to be kept long out of the Ground; therefore when they are removed, it ſhould be done in Autumn, that they may take freſh Root before the Froſt comes on; for if they are tranſplanted in the Spring, they will not produce ſtrong Flowers: theſe Plants thrive beſt in a loamy Soil; for in very light dry Ground, they are very apt to decay in Summer.

The laſt Sort is tender; therefore will not live thro' the Winter in *England*, unleſs it is ſheltered from the Cold: wherefore theſe Plants muſt be planted in Pots, and in the Winter placed under a Frame, where they may be covered in bad Weather; but they ſhould have as much free Air as poſſible in mild Weather: they will do better under one of theſe Frames, than when they are placed in the Green houſe, becauſe there the Plants draw up weak; ſo do not produce their Flowers ſo ſtrong, nor in ſo great Plenty, as when they have a greater Share of Air.

This Sort is propagated by Seeds, which ſhould be ſown in Pots of freſh Earth, ſoon after they are ripe, and placed in a ſhady Situation till Autumn; when they ſhould be removed where they may enjoy the Sun: and when the Nights begin to be froſty, the Pots muſt be placed under a Frame with the old Plants; in the Spring the Plants will appear; and after they have obtained Strength, they may be tranſplanted each into a ſeparate Pot, and treated in the ſame manner as the old Plants.

PUMPION. *Vide* Pepo.

PUNICA, The Pomgranate-tree.

The *Characters* are;

The Flower conſiſts of many Leaves, placed in a circular Order, which expand in form of a Roſe, whoſe bell-ſhaped multifid Flower-cup afterward becomes a globular Fruit, having a thick, ſmooth, brittle Rind; and is divided into ſeveral Cells, which contain oblong hard Seeds, ſurrounded with a ſoft Pulp.

The *Species* are;

1. PUNICA, *quæ malum granatum fert. Cæſalp.* The common Pomgranate.
2. PUNICA *fructu dulci. Tourn.* The ſweet Pomgranate.
3. PUNICA *ſylveſtris. Cord. Hiſt.* The wild Pomgranate.
4. PUNICA *flore pleno majore. Tourn.* The double-flower'd Pomgranate.
5. PUNICA *Americana nana, ſeu humillima. Tourn.* The *American* dwarf Pomgranate.

The firſt of theſe Trees is now pretty common in the *Engliſh* Gardens, where formerly it was nurſed up in Caſes, and preſerved in Greenhouſes with great Care (as was alſo the double flowering Kind); but they are both hardy enough to reſiſt the ſevereſt Cold of our Climate in the open Air; and if planted againſt warm Walls, in a good Situation, the firſt Sort will often produce Fruit, which, in warm Seaſons, will ripen tolerably well: but as theſe Fruits do not ripen till late in the Autumn, they are ſeldom well taſted in *England*; for which Reaſon the Sort with double Flowers is commonly preferr'd to it. The Sort with ſweet Fruit, as alſo the wild Sort, are leſs common in the *Engliſh* Gardens than the former two.

Theſe Plants may be eaſily propagated by laying down their Branches in the Spring, which in one Year's time will take good Root, and may then be tranſplanted where they are deſign'd to remain. The beſt Seaſon for tranſplanting of theſe Trees is in Spring, juſt before they begin to ſhoot: they ſhould have a ſtrong rich Soil, in which they flower much better, and produce more Fruit, than if planted on a dry poor Earth: but in order to obtain theſe in plenty, there ſhould be care taken in the Pruning of the Trees; for want of which, we often ſee theſe Trees very full of ſmall Shoots; but do not find many Flowers produced upon them: therefore I ſhall ſet down Directions for pruning of theſe Trees, ſo as to obtain a great Quantity of Flowers and Fruit.

The Flowers of this Tree always proceed from the Extremity of the Branches which were produced the ſame Year: this therefore directs, That all weak Branches of the former Year ſhould be cut out; and that the ſtronger ſhould be ſhortened in proportion to their Strength, in order to obtain new Shoots in every Part of the Tree: theſe Branches may be laid in againſt the Wall, about four or five Inches aſunder; for, as their Leaves are ſmall, there is not a Neceſſity of allowing them a greater Diſtance. The beſt time for this Work is about *Michaelmas*, or a little later, according to the Mildneſs of the Seaſon: but if they are left until Spring before they are prun'd, they ſeldom put out their Shoots ſo early; and the earlier they come out, the ſooner the Flowers will appear, which is of great Conſequence where Fruit is deſired. In Summer they will require no other Dreſſing, but to cut off very vigorous Shoots which grow from the Wall, and never produce Flowers (for they are the middling Shoots only which are fruitful); and when the Fruit is form'd, the Branches on which they grow, ſhould be faſtened to the Wall to ſupport them; otherwiſe the Weight of the Fruit, when grown large, will be apt to break them down.

Tho', as I ſaid before, the Fruit of this Tree ſeldom arrives to any Perfection in this Country, ſo as to render it valuable; yet, for the Beauty of its ſcarlet-coloured Flowers, together with the Variety of its Fruit, there ſhould be one Tree planted in every good Garden, ſince the Culture is not great which they require: the chief Care is, to plant them upon a rich ſtrong Soil, and in a warm Situation. Upon ſome Trees which had theſe Advantages, I have obtained a great Quantity of Fruit which have arrived to their full Magnitude; but I cannot ſay they were well flavour'd; however, they made a very handſome Appearance upon the Trees.

The double-flowering Kind is much more eſteemed than the other in this Country, for the ſake of its large fine double Flowers, which are of a moſt beautiful ſcarlet Colour; and, if the Trees are ſupplied with Nouriſhment, will continue to produce Flowers for near three Months ſucceſſively, which renders it one of the moſt valuable flowering Trees yet known. This muſt be prun'd and managed in the ſame manner as hath been already directed for the fruit-bearing Kind: but this Sort may be rendered more productive of its beautiful Flowers, by grafting it upon Stocks of the ſingle Kind, which will check the Luxuriancy of the Trees, and cauſe them to produce Flowers upon almoſt every Shoot: by which Method I have had a low Tree, which was planted in the open Air, extremely full of Flowers, which made a very fine Appearance.

The dwarf Sort was brought into *Europe* from the warmeſt Parts of *America*, where the Inhabitants cultivate it in their Gardens for the Beauty of its Flowers, together with its continuing to produce Flowers and Fruit moſt Part of the Year: this Sort ſeldom grows above three Feet high. The Fruit of this Kind is rarely much larger than a Walnut, and not very pleaſant to the Taſte; ſo that 'tis rather cultivated for Shew, than for the ſake of its Fruit.

This Plant may be propagated by Layers in the ſame manner as the former Sorts; but muſt be planted in Pots filled with rich Earth, and preſerved in a Green-houſe; otherwiſe it is too tender to endure the Cold of our Winters; and in the Summer, when the Flowers begin to appear, if the Plants are expoſed to the open Air, the Buds will fall off, and never open: ſo that it ſhould not be expoſed to the open Air, but placed in an airy Glaſs-caſe, giving them a large Share of Air every Day: but as they will be covered at Top, ſo the Flowers will expand, and the Fruit will grow to the full Size.

I have heard of a Sort of Pomgranate with double-ſtriped Flowers, and have found it mentioned in ſome foreign Catalogues; but have not ſeen the Plant growing; tho' I believe it may be eaſily procured from *Italy*.

PURSLAIN. *Vide* Portulaca.

PYRACANTHA. *Vide* Meſpilus.

PYROLA, Winter-green.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of ſeveral Leaves, which are placed circularly; out of whoſe Cup riſes the Pointal, ending in a Proboſcis; *which afterward turns to a roundiſh Fruit, which is chancll'd, generally umbellated, and conſiſting of five Cells, which are commonly full of ſmall Seeds.*

The *Species* are;

1. Pyrola *rotundifolia major. C. B. P.* Great round-leav'd Winter-green.

2. Pyrola *rotundifolia minor. C. B. P.* Small round-leav'd Winter-green.

3. Pyrola *folio mucronato ſerrato. C. B. P.* Winter-green, with a pointed Leaf, ſawed on the Edges.

4. Pyrola *fruteſcens, arbuti folio. C. B. P.* Shrubby Winter-green, with an Arbutus-leaf.

The firſt Sort grows wild in many Places in the North of *England*, on moſſy Moors, Hills, and Heaths, as alſo in ſhady Woods; ſo that it is very difficult to preſerve in Gardens, in the Southern Parts.

The other three Sorts are Natives of the Hills in *Germany*, *Italy*, and *Hungary*. Theſe are all of them very difficult to cultivate in Gardens:

for as they grow on very cold Hills, and in a moſſy mooriſh Soil, ſo when they are removed to a better Soil, and in a warmer Situation, they ſeldom continue long. The beſt time to tranſplant theſe Plants into Gardens, is about *Michaelmas*, provided the Roots can then be found; when they ſhould be taken up with Balls of Earth to their Roots, and planted in a ſhady Situation, and on a moiſt undunged Soil, where they ſhould be frequently watered in dry Weather, otherwiſe they will not thrive. Some of theſe Plants may be planted in Pots, which ſhould be filled with Earth as nearly reſembling that in which they naturally grow as poſſible; and place them in a ſhady Situation, where if they are conſtantly watered in dry Weather, they will thrive very well.

The Leaves of the firſt Sort are ſhaped like thoſe of the Pear-tree, from whence the Name was given to it: theſe Leaves are of a deep-green Colour, and continue moſt Part of the Year; but there is no great Beauty in their Flowers; tho' for Variety they are admitted into many curious Gardens.

The firſt Sort is ordered by the College of Phyſicians to be uſed in Medicine, and is generally brought over from *Switzerland*, amongſt other vulnerary Plants; amongſt which Claſs this Plant is ranged; and by ſome hath been greatly commended.

PYRUS, The Pear-tree.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are placed in a circular Order, and expand in form of a Roſe; whoſe Flower-cup afterward becomes a fleſhy Fruit, which is more produced toward the Footſtalks than the Apple; but is hollow'd like a Navel at the extreme Part: the Cells in which the Seeds are lodg'd, are ſeparated by ſoft Membranes, and the Seeds are oblong.

The *Species* are;

1. PYRUS *ſativa, fructu æſtivo parvo racemoſo odoratiſſimo. Tourn.* Petit Muſcat, *i. e.* Little Muſk Pear, commonly called the Supreme. This Fruit is generally produced in large Cluſters: it is rather round than long; the Stalk ſhort; and, when ripe, the Skin is of a yellow Colour: the Juice is ſomewhat muſky, and, if gathered before it is too ripe, is an excellent Pear. This ripens at the Beginning of *July*, and will continue good but for a few Days.

2. PYRUS *ſativa, fructu æſtivo minimo odoratiſſimo. Tourn.* Poire de Chio, *i. e.* The *Chio* Pear, commonly called the Little Baſtard Muſk Pear. This is ſmaller than the former, but is in Shape pretty much like that: the Skin, when ripe, has a few Streaks of Red on the Side next the Sun; and the Fruit ſeldom hangs in Cluſters, as the former; but in other reſpects is nearly like it.

3. PYRUS *ſativa, fructu æſtivo parvo, e viridi albido. Tourn.* Poire Hâtiveau, *i. e.* The Haſting Pear: Poire Madeleine, ou Citron des Carmes: commonly called the Green Chiſſel. This is a larger Pear than either of the former, and is produc'd more toward the Pedicle: the Skin is thin, and of a whitiſh-green Colour when ripe; the Fleſh is melting, and, if not too ripe, of a ſugary Flavour; but is apt to be mealy: this ripens the Middle of *July*.

4. PYRUS *ſativa, fructu æſtivo partim ſaturate rubente, partim flaveſcente. Tourn.* Muſcadelles Rouges, *i. e.* The Red Muſcadelle. It is alſo called La Belliſſime, *i. e.* The Faireſt or Supreme. This is a large early Pear, of great Beauty: the Skin

is of a fine yellow Colour, when ripe, beautifully ſtriped with red; the Fleſh is half melting, and has a rich Flavour, if gathered before it be too ripe; but it is apt to be mealy. This generally produces two Crops of Fruit in a Year: the firſt is commonly ripe about the Middle of *July*, and the ſecond ripens in *September*; but this late Crop is ſeldom well-taſted.

5. Pyrus *ſativa, fructu æſtivo parvo flaveſcente moſchato. Tourn.* Petit Muſcat, *i. e.* The Little Muſcat. This is a ſmall Pear, rather round than long: the Skin is very thin, and when ripe, of a yellowiſh Colour: the Fleſh is melting, and of a rich muſky Flavour; but will not keep long when ripe. This comes the Middle of *July*.

6. Pyrus *ſativa, fructu æſtivo oblongo ferrugineo, carne tenera moſchata. Tourn.* Cuiſſe Madame, Lady's Thigh, in *England* commonly called Jargonelle. This is a very long Pear, of a pyramidal Shape, having a long Footſtalk: the Skin is pretty thick, of a ruſſet-green Colour from the Sun; but toward the Sun it is inclined to an iron Colour; the Fleſh is breaking, and has a rich muſky Flavour: ripe the Middle of *July*. This is one of the beſt early Summer Pears yet known, and is certainly what all the *French* Gardeners call the *Cuiſſe Madame*, as may be eaſily obſerved by their Deſcription of this Pear: but I ſuppoſe, that the Titles of this and the Jargonelle were changed in coming to *England*; and have been continued by the ſame Names.

7. Pyrus *ſativa, fructu oblongo, e viridi flaveſcente.* The *Windſor* Pear. This is an oblong Fruit, which is produced toward the Crown; but near the Stalk is drawn toward a Point: the Skin is ſmooth, and, when ripe, of a yellowiſh-green Colour; the Fleſh is very ſoft; and, if permitted to hang but two or three Days after it is ripe, it grows mealy, and is good for nothing.

8. Pyrus *ſativa, fructu æſtivo oblongo, e viridi albo.* The Jargonelle, now commonly called Cuiſſe Madame. This is certainly what the *French* Gardeners call the Jargonelle; which, as I before obſerved, is now, in *England*, given to another Fruit, much preferable to this; ſo that the two Names are changed; for the Jargonelle is always placed amongſt thoſe which the *French* call bad Fruit; and the Cuiſſe Madame is ſet down amongſt their beſt Fruit; which is certainly the Reverſe with us, as they are now named. This Pear is ſomewhat like the *Windſor*; but is produced more toward the Crown, and is ſmaller toward the Stalk; the Skin is ſmooth, of a pale-green Colour: the Fleſh is apt to be mealy, if it ſtands to be ripe; but being a plentiful Bearer, is much propagated for the *London* Markets.

9. Pyrus *ſativa, fructu æſtivo globoſo ſeſſili moſchato, maculis nigris conſperſo. Tourn.* Orange Muſquée, *i. e.* The Orange Muſk. This is a middle-ſiz'd Pear, of a ſhort globular Form: the Skin is of a yellowiſh Colour, ſpotted with black; the Fleſh is muſky; but is very apt to be a little dry and choaky. It ripens the End of *July*.

10. Pyrus *ſativa, fructu æſtivo albido majori. Tourn.* Gros Blanquet, *i. e.* Great Blanket. This is alſo called La Muſſette d'Anjou, *i. e.* The Bagpipe of *Anjou*. This is a large Pear, approaching to a round Form: the Skin is ſmooth, and of a pale-green Colour; the Fleſh is ſoft, and full of Juice, which hath a rich Flavour; the Stalk is ſhort, thick,

and ſpotted; the Wood is ſlender; and the Leaf is very much like that of the Tree called the Jargonelle. This ripens the End of *July*.

11. Pyrus *ſativa, fructu æſtivo albido ſaccharato odoratiſſimo. Tourn.* The Blanquette, or Muſk Blanquette; the Little Blanquet Pear. This Pear is much leſs than the former, and more pinch'd in near the Stalk, which is alſo ſhort, but ſlenderer than that of the former; the Skin is ſoft, and of a pale-green Colour; the Fleſh is tender, and full of a rich muſky Juice: the Wood of this Tree is much ſtronger than is that of the former, and the Shoots are commonly ſhorter. This ripens the End of *July*.

12. Pyrus *ſativa, fructu albido, pediculo longo donato. Tourn.* Blanquette à longue queüe, *i. e.* Long-ſtalk'd Blanquet Pear. This Pear is in Shape ſomewhat like the former; but the Eye is larger, and more hollow'd at the Crown; toward the Stalk it is ſomewhat plumper, and a little crooked: the Skin is very ſmooth, white, and ſometimes toward the Sun is a little coloured: the Fleſh is between melting and breaking, and is full of a rich ſugary Juice. This ripens the Beginning of *Auguſt*.

13. Pyrus *ſativa, fructu æſtivo oblongo rufeſcente ſaccharato. Tourn.* Poire ſans Peau, *i. e.* The Skinleſs Pear. It is alſo called Fleur de Guigne, *i. e.* Flower of *Guigne*; and by ſome, Rouſſelet hâtif, *i. e.* The Early Ruſſelet. This is a middle-ſized Fruit, of a long Shape, and a rediſh Colour, ſomewhat like the Ruſſelet: the Skin is extremely thin; the Fleſh is melting, and full of a rich ſugary Juice; the Shoots are long and ſtrait. This ripens the End of *July*.

14. Pyrus *ſativa, fructu æſtivo turbinato, carne tenera ſaccharata. Tourn.* Muſcat Robine, *i. e.* The Muſk Robine Pear. This is alſo called Poire à la Reine, *i. e.* The Queen's Pear; Poire d'Ambre, *i. e.* The Amber Pear; and Pucelle de Xaintonge, *i. e.* The Virgin of *Xaintonge*. This is a ſmall round Pear, of a yellowiſh Colour when ripe; the Fleſh is between melting and breaking; it has a rich muſky Flavour, and is a great Bearer: it ripens the End of *July*.

15. Pyrus *ſativa, fructu æſtivo turbinato moſchato.* Le Bourdon Moſque, *i. e.* The Muſk Drone Pear. This is a middle-ſized round Fruit, whoſe Skin is of a yellowiſh Colour when ripe; the Fleſh is melting, and full of an high muſky Juice: but it muſt not hang too long on the Tree, for it is ſubject to grow mealy in a ſhort time. This ripens the End of *July*.

16. Pyrus *ſativa, æſtivo fructu globoſo ſeſſili, e viridi purpuraſcente ſaccharato odorato. Tourn.* Orange Rouge, *i. e.* The Red Orange Pear. This Pear hath been the moſt common of all the Sorts in *France*, which was occaſioned by the general Eſteem it was in ſome Years ſince. This is a middle-ſized round Fruit, of a greeniſh Colour; but the Side next the Sun changes to a purple Colour when ripe; the Fleſh is melting, and the Juice is ſugar'd, with a little Perfume; the Eye is very hollow, and the Stalk is ſhort. This ripens the Beginning of *Auguſt*.

17. Pyrus *ſativa, fructu æſtivo oblongo minori cinereo odorato. Tourn.* Caſſolette Friolet, Muſcat verd Lechefrion. This is ſo called from its being ſhaped like a Perfuming-pot. It is a long Fruit, in Shape like the Jargonelle, of an Aſh-colour; its Fleſh is melting, and full of a perfumed Juice; but is very apt to rot in the Middle as ſoon as

ripe; otherwiſe it would be eſteemed an excellent Pear. It is ripe the Beginning of *Auguſt*.

18. Pyrus *ſativa, fructu æſtivo turbinato, e viridi albido.* Orange Muſquée, *i. e.* The Muſk Orange Pear. This is a large round Pear, in Shape like a Bergamot: the Skin is green, and the Fleſh is melting; but it is very ſubject to rot upon the Tree, which renders it not near ſo valuable as ſome others. It ripens the End of *July*.

19. Pyrus *ſativa, fructu æſtivo globoſo e viridi purpuraſcente. Tourn.* Gros Oignonnet, *i. e.* The Great Onion Pear. It is alſo called Amiréroux, *i. e.* Brown Admired; and Roy d'Eté, *i. e.* King of Summer; Archiduc d'Eté, *i. e.* The Summer Archduke. This is a middle-ſiz'd round Pear, of a browniſh Colour next the Sun; the Fleſh is melting, and the Juice is paſſably good. This ripens the End of *July*.

20. Pyrus *ſativa, fructu æſtivo globoſo ſeſſili ex albido flaveſcente ſaccharato odorato. Tourn.* Robine. It is alſo called Muſcat d'Aouſt, *i. e.* The Auguſt Muſcat; Poire d'Averat, *i. e.* The Averat Pear; and Poire Royale, *i. e.* The Royal Pear. This is a roundiſh flat Pear, in Shape very like a Bergamot: the Stalk is long, ſtrait, and a little ſpotted, and the Eye is a little hollowed; the Skin is ſmooth, and of a whitiſh-yellow Colour; the Fleſh is breaking, but not hard; and its Juice is richly ſugar'd and perfum'd: it is a great Bearer, and is eſteemed one of the beſt Summer Pears yet known. It ripens in *Auguſt*.

21. Pyrus *ſativa, fructu æſtivo globoſo ſeſſili odorato. Tourn.* Poireroſe; *i. e.* The Roſe-pear; and L'Epine-Roſe, *i. e.* The Thorny-Roſe. This is a ſhort round Fruit, ſhaped like the Great Onion Pear, but much larger; of a yellowiſh green Colour; but a little inclining to Red on the Side next the Sun: the Stalk is very long and ſlender; the Fleſh is breaking, and the Juice is muſky. This ripens in *Auguſt*. The Shoots and the Leaves of this Tree are large.

22. Pyrus *ſativa, fructu æſtivo globoſo albido ſaccharato. Tourn.* Poire du Pouchet. This is a large round whitiſh Pear, ſhap'd ſomewhat like the *Beſideri*: the Fleſh is ſoft and tender, and the Juice is ſugary. This ripens the Middle of *Auguſt*.

23. Pyrus *ſativa, fructu æſtivo turbinato ſeſſili ſaturatius rubente punctato. Tourn.* Poire de Parfum, *i. e.* The Perfum'd Pear. This is a middle-ſized round Fruit, whoſe Skin is ſomewhat thick and rough, and of a deep-red Colour, ſpotted with brown: the Fleſh is melting, but dry, and has a perfum'd Flavour. This ripens the Beginning of *Auguſt*.

24. Pyrus *ſativa, fructu æſtivo oblongo magno, partim rubro, partim albido, odorato. Tourn.* Bon-crêtien d'Eté, *i. e.* The Summer Bon-crêtien, or Good Chriſtian. This is a large oblong Fruit, whoſe Skin is ſmooth and thin: the Side next the Sun is of a beautiful red Colour; but the other Side is of a whitiſh-green: the Fleſh is between breaking and tender, and is very full of Juice, which is of a rich perfum'd Flavour. It ripens the End of *Auguſt*.

25. Pyrus *ſativa, fructu æſtiva globoſo, ex rubro albidoque flaveſcente ſaccharato odorato. Tourn.* Salviati. This Pear is pretty large, round, and flat, very much like the Beſidéri in Shape, but not in Colour: the Stalk is very long and ſlender, and the Fruit is a little hollow'd both at the Eye and Stalk; the Colour is red and yellow next the Sun; but on the other Side is whitiſh: the Skin is

rough; the Fleſh is tender; but a little ſoft, and has no Core; the Juice is ſugary, and perfum'd, ſomewhat like the Robine; but is not near ſo moiſt. This ripens the End of *Auguſt*.

26. Pyrus *ſativa, fructu æſtivo globoſo ſeſſili rufeſcente odorato. Tourn.* Caillot-roſat, *i. e.* Roſe-water Pear. This is a large round Pear, ſomewhat like the Meſſire-Jean, but rounder: the Stalk is very ſhort, and the Fruit is hollow'd like an Apple, where the Stalk is produc'd: the Skin is rough, and of a brown Colour: the Fleſh is breaking, and the Juice is very ſweet. This ripens the End of *Auguſt*.

27. Pyrus *ſativa, fructu æſtivo longo, acerbitate ſtrangulationem minitante. Tour.* Poire d'Etrangillon, *i. e.* The Choaky Pear: the Fleſh is red. This is ſeldom preſerved in Gardens; ſo there needs no Deſcription of it.

28. Pyrus *ſativa, fructu æſtivo oblongo e ferrugineo rubente, nonnunquam maculato.* Poire de Rouſſelet, *i. e.* The Ruſſelet Pear. This is a large oblong Pear: the Skin is brown, and of a dark-red Colour next the Sun; the Fleſh is tender and ſoft, without much Core: the Juice is agreeably perfum'd, if gather'd before it be too ripe: this produces larger Fruit on an Eſpalier than on Standard-trees. It ripens the End of *Auguſt*.

29. Pyrus *ſativa, fructu æſtivo ſubrotundo, partim rubro, partim flaveſcente, odorato.* Poire de Prince, *i. e.* The Prince's Pear. This is a ſmall roundiſh Pear, of a bright-red Colour next the Sun, but of a yellowiſh Colour on the oppoſite Side: the Fleſh is between breaking and melting; the Juice is very high-flavour'd; and it is a great Bearer. This ripens the End of *Auguſt*; but will keep a Fortnight good, which is what few Summer-fruits will do.

30. Pyrus *ſativa, fructu æſtivo globoſo viridi, in ore liqueſcente.* Gros Moüille-bouche, *i. e.* The great Mouth-water Pear. This is a large round Pear, with a ſmooth-green Skin: the Stalk is ſhort and thick; the Fleſh is melting, and full of Juice, if gathered before it be too ripe; otherwiſe it is apt to grow mealy. This ripens the Middle of *Auguſt*.

31. Pyrus *ſativa, fructu æſtivo rotundo ſeſſili ſaccharato, e viridi flaveſcente*; Bergamotte d'Eté, *i. e.* Summer-Bergamot. This is by ſome called the *Hamden*'s Bergamot. It is a pretty large round flat Pear, of a greeniſh-yellow Colour, and hollow'd a little at both Ends like an Apple: the Fleſh is melting, and the Juice is highly perfum'd. This ripens the Middle of *Auguſt*.

32. Pyrus *ſativa, fructu autumnali ſeſſili ſaccharato odorato e viridi flaveſcente, in ore liqueſcente. Tourn.* Bergamotte d'Automne, *i. e.* The Autumn Bergamot. This is a ſmaller Pear than the former, but is nearly of the ſame Shape: the Skin is of a yellowiſh Green, but changes to a faint Red on the Side next the Sun; the Fleſh is melting, and its Juice is richly perfumed: it is a great Bearer, and ripens the Middle of *September*; and is one of the beſt Pears of the Seaſon.

33. Pyrus *ſativa, fructu autumnali turbinato viridi, ſtriis ſanguineis diſtincta. Tourn.* Bergamot de Suiſſe, *i. e.* The *Swiſs* Bergamot. This Pear is ſomewhat rounder than either of the former: the Skin is tough, of a greeniſh Colour, ſtriped with red; the Fleſh is melting, and full of Juice; but it is not ſo richly perfumed as either of the former. This ripens the End of *September*.

34. Pyrus *ſativa, fructu autumnali ſuaviſſimo, in ore liqueſcente. Tourn.* Beurré rouge, *i. e.* The Red Butter-pear. It is called l'Amboiſe; and in *Normandy*, Iſambert; as alſo Beurré gris, *i. e.* The Grey Butter; and Beurré vert, *i. e.* The Green Butter-pear. All theſe different Names of Beurrés have been occaſioned by the Difference of the Colours of the ſame Sort of Pear; which is either owing to the different Expoſure where they grew, or from the Stock; thoſe upon Free-ſtocks being commonly of a browner Colour than thoſe which are upon Quince-ſtocks; whence ſome Perſons have ſuppoſed them to be different Fruits, tho' in Reality they are the ſame. This is a large long Fruit, for the moſt part of a brown Colour; the Fleſh is very melting, and full of a rich ſugary Juice. It ripens the End of *September*; and, when gathered from the Tree, is one of the very beſt Sort of Pears we have.

35. Pyrus *ſativa, fructu autumnali turbinato ſeſſili flaveſcente, & in ore liqueſcente. Tourn.* Le Doyenné, *i. e.* The Dean's Pear. It is alſo called by all the following Names; Saint Michel, *i. e.* Saint Michael; Beurré blanc d'Automne, *i. e.* The White Autumn Butter-pear; Poire de Neige, *i. e.* The Snow-pear; Bonne Ente, *i. e.* A good Graft; the *Carliſle* and *Valentia*. This is a large fair Fruit, in Shape ſomewhat like the Grey Beurré; but is ſhorter and rounder: the Skin is ſmooth, and, when ripe, changes to a yellowiſh Colour: the Fleſh is melting, and full of Juice, which is very cold; but it will not keep good a Week after it is gathered, being very ſubject to grow mealy: it is a very indifferent Fruit. This is a great Bearer, and ripens the End of *September*.

36. Pyrus *ſativa, fructu autumnali longo viridique odorato, in ore liqueſcente. Tourn.* La Verte-longue, *i. e.* The Long-green Pear. It is alſo called Moüille-bouche d'Automne, *i. e.* The Autumn Mouth-water Pear. This is a long Fruit, which is very green when ripe: the Fleſh is melting, and very full of Juice; which, if it grows upon a dry warm Soil, and upon a Free-ſtock, is very ſugary; otherwiſe it is but a very indifferent Pear. It ripens the Beginning of *October*; but ſome Years they will keep till *December*.

37. Pyrus *ſativa, fructu autumnali tuberoſo ſeſſili ſaccharato, carne dura. Tourn.* Meſſire Jean blanc & gris, *i. e.* The white and grey Monſieur John. Theſe, altho' made two Sorts of Fruit by many Perſons, are indubitably the ſame; the Difference of their Colour proceeding from the different Soils and Situations where they grow, or the Stocks on which they are grafted. This Pear, when grafted on a Free-ſtock, and planted on a middling Soil, neither too wet, nor over-dry, is one of the beſt Autumn Pears yet known; but when it is grafted on a Quince-ſtock, it is very apt to be ſtony; or, if planted on a very dry Soil, is very apt to be ſmall, and good for little, unleſs the Trees are watered in dry Seaſons: which has rendered it leſs eſteemed by ſome Perſons, who have not conſider'd the Cauſe of their Hardneſs: for when it is rightly manag'd, there is not any Pear in the ſame Seaſon to be compared with it: this is a large roundiſh Fruit; the Skin is rough, and commonly of a brown Colour; the Fleſh is breaking, and very full of a rich ſugar'd Juice. It ripens the Beginning of *October*, and will continue good moſt Part of the Month.

38. Pyrus *ſativa, fructu autumnali globoſo ferrugineo, carne tenera ſapidiſſima. Tourn.* Muſcat fleuri, *i. e.* The flower'd Muſcat. It is alſo called *Muſcat à longue queüe d'Automne, i. e.* The Long-ſtalk'd Muſcat of the Autumn. This is an excellent Pear, of a middling Size, and round; the Skin is of a dark-red Colour; the Fleſh is very tender, and of a delicate Flavour. It ripens in the Middle of *October*.

39. Pyrus *ſativa, fructu autumnali globoſo ferrugineo, carne viſcida. Tourn.* Poire de Vigne, *i. e.* The Vine-pear. This is a round Fruit, of a middling Size; the Skin of a dark-red Colour; the Fleſh is very melting, and full of a clammy Juice. the Stalk is very long and ſlender. This Fruit ſhould be gathered before it be full ripe; otherwiſe it grows mealy, and ſoon rots. It ripens the Middle of *October*.

40. Pyrus *ſativa, fructu autumnali oblonga, dilute rufeſcente, ſaccharato, odoratiſſimo. Tourn.* Poire Rouſſeline, *i. e.* The Rouſſeline Pear. It is alſo called in *Touraine*, Le Muſcat à longue queüe de la fin d'Automne, *i. e.* The long-ſtalk'd Muſcat of the End of Autumn. This is by ſome *Engliſh* Gardeners called the Brute-bonne: but that is a very different Fruit from this. It is ſhaped ſomewhat like the Rouſſelet; but the Skin of this is ſmooth, and of a Greeniſh-yellow from the Sun; but the Side next the Sun is of a deep-red Colour, with ſome Spots of Grey; the Fleſh is very tender and delicate; the Juice is very ſweet, with an agreeable Perfume. It ripens the Beginning of *October*; but muſt not be long kept, leſt it rot in the Middle.

41. Pyrus *ſativa, fructu autumnali oblongo majori cinereo. Tourn.* Poire Pendar, *i. e.* The Knave's Pear. This is very like the Caſſolette Pear; but is ſomewhat larger; the Fleſh is fine and tender: the Juice is very much ſugar'd. It ripens the End of *October*.

42. Pyrus *ſativa, fructu autumnali turbinato tuberoſo viridi ſaccharato, in ore liqueſcente. Tourn.* Sucré vert, *i. e.* The Green Sugar-pear. This Pear is ſhaped like the Winter-thorn, but is ſmaller; the Skin is very ſmooth and green; the Fleſh is very buttery; the Juice is ſugar'd, and of an agreeable Flavour; but it is ſometimes ſubject to be ſtony in the Middle, eſpecially if grafted on a Quince-ſtock.

43. Pyrus *ſativa, fructu autumnali tuberoſo ſeſſili, e viridi flaveſcente, maculis nigris conſperſo, carne tenera ſaccharata. Tourn.* La Marquiſe, *i. e.* The Marquis's Pear. This is often of two different Shapes, according to the Nature of the Soil where they are planted; for when the Soil is dry, the Fruit very much reſembles a fine Blanquet; but when the Soil is very rich and moiſt, it grows much larger: it is a well-ſhaped Pear, flat at the Top; the Eye is ſmall, and hollow'd; the Skin is of a greeniſh Yellow, a little inclining to Red on the Side next the Sun: if this Pear does not change yellow in ripening, it is ſeldom good; but if it does, the Fleſh will be tender and delicate, very full of Juice, which is ſugar'd. It ripens the End of *October*.

44. Pyrus *ſativa, fructu autumnali oblongo, partim albido, partem rufeſcente.* The Chat-brulé, *i. e.* The Burnt Cat. It is alſo called Pucelle de Xaintonge, *i. e.* The Virgin of *Xaintonge*. This is a ſmall oblong Pear, ſhap'd much like the Martin Sec; but differs from it in Colour: this being of a pale Colour on one Side, but of a dark-brown on the

other; the Skin is ſmooth; the Fleſh is tender, but dry; and, if kept a ſhort time, is apt to grow mealy. It is in eating the Latter-end of *October*.

45. Pyrus *ſativa, fructu autumnali globoſo ſeſſili, ex albido flaveſcente.* Le Beſidéri. It is ſo called from *Heri*, which is a Foreſt in *Bretagne*, between *Rennes* and *Nantes*, where this Pear was found. This is a middle-ſiz'd round Pear, of a pale Green, inclining to a yellowiſh Colour; the Stalk is very long and ſlender; the Fleſh is dry, and but very indifferent for eating; but it bakes well. It ripens the End of *October*.

46. Pyrus *ſativa, fructu brumali ſeſſili, e viridi flaveſcente, maculato, utrinque umbilicato, in ore liqueſcente. Tourn.* The Craſane, or Bergamot Craſane. It is alſo called Beurré Plat, *i. e.* The Flat Butter-pear. This is a middle-ſiz'd Pear, hollow'd at the Crown like an Apple: the Stalk is very long and crooked; the Skin is rough, of a greeniſh-yellow Colour when ripe, covered over with a ruſſet Coat; the Fleſh is extremely tender, and buttery, and is full of a rich ſugar'd Juice; and is the very beſt Pear of the Seaſon. This is in eating the Beginning of *November*.

47. Pyrus *ſativa, fructu brumali turbinato ſeſſili flaveſcente ſaccharato odorato, in ore liqueſcente. Tourn.* Lanſac ou la Dauphine, *i. e.* The Lanſac or Dauphine Pear. This Pear is commonly about the Size of a *Bergamot*, of a roundiſh Figure, flat toward the Head; but a little produc'd toward the Stalk; the Skin is ſmooth, and of a yellowiſh-green Colour; the Fleſh is yellow, tender, and melting; the Juice is ſugar'd, and a little perfum'd; the Eye is very large, as is alſo the Flower; and the Stalk is long and ſtrait. When this Pear is upon a Free-ſtock, and planted on a good Soil, it is one of the beſt Fruits of the Seaſon; but when it is on a Quince-ſtock, or upon a very dry Soil, the Fruit will be ſmall, ſtony, and worth little. It ripens the Beginning of *November*.

48. Pyrus *ſativa, fructu brumali oblongo, partim intenſe, partim dilute ferrugineo, ſaccharato, odorato. Tourn.* Martin Sec, *i. e.* The Dry Martin. This is ſometimes called the Dry Martin of *Champagne*, to diſtinguiſh it from another Dry Martin of *Burgundy*. This Pear is almoſt like the Rouſſelet in Shape and Colour, which has occaſioned ſome Perſons to give it the Name of Winter Ruſſelet. It is an oblong Pear, whoſe Skin is of a deep-ruſſet Colour on one Side; but the other Side is inclining to a Red; the Fleſh is breaking and fine; the Juice is ſugar'd, with a little Perfume; and if grafted on a Free-ſtock, is an excellent Pear; but if it be on a Quince-ſtock, it is very apt to be ſtony. It is in eating the Middle of *November*; but if they were permitted to hang their full time on the Tree, will keep good two Months.

49. Pyrus *ſativa, fructu brumali magno ſeſſili, e cinereo flaveſcente. Tourn.* La Villaine d'Anjou, *i. e.* The Villain of Anjou. It is alſo called Poire Tulipée, *i. e.* The Tulip-pear; and Bigarrade, *i. e.* The Great Orange. This is a large round Pear, with a very long ſlender Stalk; the Skin is of a pale-yellow Colour; the Fleſh is breaking, but not very full of Juice. This is in eating the Middle of *November*.

50. Pyrus *ſativa, fructu brumali flaveſcente odoratiſſimo, pediculo craſſiori. Tourn.* Poire de gros queüe, *i. e.* The Large-ſtalk'd Pear. This is a large roundiſh Pear, with a yel-

low Skin; the Stalk is very thick, from whence it had the Name; the Fleſh is breaking and dry, and has a very muſky Flavour; but it is apt to be ſtony, eſpecially if it be planted in a dry Soil, or grafted on a Quince-ſtock, as are moſt of the perfum'd Pears.

51. Pyrus *ſativa, fructu brumali turbinato ruſeſcente odorato.* L'Amadote, *i. e.* The Amadot Pear. This is a middle-ſiz'd Pear, ſomewhat long, but flat at the Top; the Skin is generally rough, and of a ruſſet Colour; the Fleſh is dry, and high-flavour'd, if grafted on a Free-ſtock. The Wood of this Tree is generally thorny, and is eſteemed the beſt Sort of Pears for Stocks to graft the melting Pears upon, becauſe it gives them ſome of its fine muſky Flavour. It is in eating the End of *November*; but will keep good ſix Weeks.

52. Pyrus *ſativa, fructu brumali, globoſo, dilute virente, tuberoſo, punctato, in ore liqueſcente. Tourn.* Petit Oin, *i. e.* Little Lard Pear. It is alſo called Bouvar and Rouſette d'Anjou, *i. e.* The Ruſſet of *Anjou*; and Amadont, and Marveille d'Hyver, *i. e.* The Wonder of the Winter. This Pear is of the Size and Shape of the Ambret or Leſchaſſerie; but the Skin is of a clear green Colour, and a little ſpotted; the Stalk is pretty long and ſlender; the Eye is large, and deeply hollow'd; the Fleſh is extremely fine, and melting; the Juice is much ſugar'd, and has an agreeable muſky Flavour. It is in eating the End of *November*, and moſt Part of *December*; and is eſteemed one of the beſt Fruits in that Seaſon. This is better on a Free-ſtock than upon the Quince.

53. Pyrus *ſativa, fructu brumali longo e viridi albicante, in ore liqueſcente. Tourn.* Louiſebonne, *i. e.* The Good Lewis Pear. This Pear is ſhaped ſomewhat like the *St. Germain*, or the Autumn *Verte-longue*; but is not quite ſo much pointed; the Stalk is very ſhort, fleſhy, and ſomewhat bent; the Eye, and the Flower, are ſmall; the Skin is very ſmooth; the Colour is green, inclineing to a white when ripe; the Fleſh is extremely tender, and full of Juice, which is very ſweet, eſpecially when it grows upou a dry Soil; otherwiſe it is apt to be very large and ill-taſted. It is in eating the Latter-end of *November*, and the Beginning of *December*.

54. Pyrus *ſativa, fructu brumali, tuberoſo, e viridi flaveſcente, punctato, ſaccharato. Tourn.* Poire de Colmar, *i. e.* The Colmar Pear. It is alſo called Poire Manne, The Manna Pear; and Bergamotte tardive, The late Burgamot. This Pear is ſomewhat like a Bon-crêtien in Shape; but the Head is flat; the Eye is large, and deeply hollow'd; the Middle is larger than the Head, and is ſlop'd toward the Stalk, which is ſhort, large, and a little bent; the Skin is green, with a few yellowiſh Spots; but is ſometimes a little coloured on the Side next the Sun; the Fleſh is very tender, and the Juice is greatly ſugar'd. It is in eating the Latter-end of *November*; but will often keep good till *January*; and is eſteemed one of the beſt Fruits of that Seaſon.

55. Pyrus *ſativa, fructu brumali, globoſo, citriformi, flaveſcente, punctato, in ore liqueſcente, ſaccharato, odoratiſſimo. Tourn.* L'Eſchaſſerie. It is alſo called Verte-longue d'Hyver, *i. e.* The Winter long-green Pear; and Beſidéri Landri, *i. e.* The Landry Wilding. This Pear is ſhaped like a Citron; the Skin is ſmooth, and of a green Colour,

lour, with ſome Spots while it hangs on the Tree; but, as it ripens, it becomes of a yellowiſh Colour; the Stalk is ſtrait and long; the Eye is ſmall, and not hollow'd; the Fleſh is melting, and buttery; the Juice is ſugar'd, with a little Perfume. It is in eating the Latter-end of *November*, and continues good till *Chriſtmas*.

56. Pyrus *ſativa, fructu brumali longo, e viridi flaveſcente, in ore liqueſcente, ſaccharato. Tourn.* Le Virgoulé, or La Virgouleuſe. It is alſo called Bujaleuf, and Chambrette; and Poire de Glaſſe, *i. e.* The Ice Pear, in *Gaſcoigne*; but it is called *Virgoule*, from a Village of that Name in the Neighbourhood of *St. Leonard* in *Limouſin*, where it was raiſed, and ſent to *Paris*, by the Marquis of *Chambret*. This Pear is large, long, and of a green Colour, inclining to yellow, as it ripens: the Stalk is ſhort, fleſhy, and a little bent; the Eye is of a middling Size, and a little hollow'd; the Skin is very ſmooth, and ſometimes a little colour'd towards the Sun; the Fleſh is melting, and full of a rich Juice. It is in eating the Latter-end of *November*, and will continue good till *January*; and is eſteemed one of the beſt Fruits of the Seaſon; but the Tree is very apt to produce vigorous Shoots; and the Bloſſoms being generally produc'd at the extreme Part of the Shoot, where they are ſhorten'd, the Fruit will be intirely cut away, which is the Reaſon it is condemn'd as a bad Bearer; but when it is grafted on a Free-ſtock, it ought to be allowed at leaſt forty Feet to ſpread: and, if upon a Quince-ſtock, it ſhould be allowed upward of thirty Feet, and the Branches trained in againſt the Eſpalier or Wall, at full Length, in an horizontal Poſition, as they are produced. Where this Tree is thus treated, it will bear very plentifully.

57. Pyrus *ſativa ſpinoſa, fructu globoſo, ſeſſili, ferrugineo, in ore liqueſcente, ſaccharato, odoratiſſimo. Tourn.* Poire d'Ambrette. This is ſo called from its muſky Flavour, which reſembles the Smell of the Sweet Sultan Flower, which is called Ambrette in *France*. This Pear is like the Leſchaſſerie in Shape, but is of a ruſſet Colour; the Eye is larger, and more hollow'd; the Fleſh is melting, and the Juice is richly ſugar'd and perfum'd; the Seeds are large and black, and the Cells in which they are lodg'd are very large; the Wood is very thorny, eſpecially when grafted on Free-ſtocks. The Fruit is in eating the Latter-end of *November*, and continues good till the Latter-end of *January*; and is eſteemed a very good Fruit by moſt People.

58. Pyrus *ſativa, fructu brumali, magno, pyramidato, albido, in ore liqueſcente, ſaccharato, odorato. Tourn.* Epine d'Hyver, *i. e.* Winter-thorn Pear. This is a large fine Pear, nearly of a pyramidal Figure; the Skin is ſmooth, and of a pale-green Colour, inclining to yellow as it ripens; the Stalk is ſhort and ſlender; the Fleſh is melting and buttery; the Juice is very ſweet; and, in a dry Seaſon, is highly perfumed; but when it is planted on a moiſt Soil, or the Seaſon proves wet, it is very inſipid; ſo that it ſhould never be planted on a ſtrong Soil. It ripens the End of *November*, and will continue good two Months.

59. Pyrus *ſativa, fructu brumali longo, e viridi flaveſcente, in ore liqueſcente. Tourn.* La Saint Germain, *i. e.* The St. Germain Pear. It is alſo called L'Inconnüe de la Fare, *i. e.* The Unknown of *La Fare*:

it being firſt diſcovered upon the Banks of a River which is called by that Name, in the Pariſh of *St. Germain*. This is a large long Pear, of a yellowiſh-green Colour when ripe; the Fleſh is melting, and very full of Juice; which in a dry Seaſon, or if planted on a warm dry Soil, is very ſweet; but when it is planted on a moiſt Soil, the Juice is very apt to be harſh and auſtere; which renders it leſs eſteemed by ſome Perſons; tho' in general it is greatly valued. This is in eating the End of *November*; but will many times continue good till *Chriſtmas*.

60. PYRUS *ſativa, fructu brumali tuberoſo ſubacido flaveſcente punctato. Tourn.* Saint Auſtin. This is about the Size of a middling *Virgouli* Pear; but is ſome what ſhorter, and ſlenderer near the Stalk; the Skin is of a fine citron Colour, ſpotted with red on the Side next the Sun; the Fleſh is tender, but not buttery; and is pretty full of Juice, which is often a little ſharp; which to ſome Perſons is diſagreeable, but others value it on that Account. This is in eating in *December*; and will continue good two Months.

61. PYRUS *ſativa, fructu brumali pyramidato, partim purpureo, punctis nigris conſperſo, flaveſcente. Tourn.* Bon-crêtien d'Eſpagne, *i. e.* The *Spaniſh* Bon-crêtien. This is a large Pear, of a pyramidal Form, of a fine red or purple Colour on the Side next the Sun, and full of ſmall black Spots; the other Side is of a pale-yellow Colour; the Fleſh is breaking; and, when it is on a light rich Soil, and grafted on a Free-ſtock, its Juice is very ſweet. It ripens in the Beginning of *December*, and will continue good a Month, or ſix Weeks. If this be grafted on a Quince-ſtock, it is very apt to be dry and ſtony: this is a very good Fruit for bakeing.

62. PYRUS *ſativa, fructu brumali magno oblongo turbinato ferrugineo, utrinque umbilicato. Tourn.* Poire de Livre, *i. e.* The Pound Pear. It is alſo called Groſs Ratteau Gris, *i. e.* The Grey-rak'd Pear; and Poire d'Amour, *i. e.* The lovely Pear. In *England* this is called *Parkinſon*'s Warden, or the Black Pear of *Worceſter*. This is a very large Pear, each of which commonly weighs a Pound or more; the Skin is rough, and of an obſcure red Colour on the Side next the Sun; but ſomewhat paler on the other Side; the Stalk is very ſhort, and the Eye is greatly hollow'd. This is not fit for eating, but bakes or ſtews exceeding well; and is in Seaſon from *November* to *Chriſtmas*.

63. PYRUS *ſativa, fructu brumali parvo flaveſcente, maculis rubris conſperſo. Tourn.* Beſi de Caſioy, *i. e.* The Wilding of *Caſſoy*, a Foreſt in *Bretagne*, where it was diſcovered, and paſſes under the Name of Rouſſet d'Anjou. It is alſo called Petit Beurré d'Hyver, *i. e.* Small Winter Butter-pear. This is a ſmall oblong Pear, of a yellowiſh Colour, ſpotted with red: the Fleſh is melting, and the Juice is very rich. It is in eating in *December* and *January*. This is a prodigious Bearer, and commonly produces its Fruit in large Cluſters, provided it be not too much pruned; for it generally produces its Bloſſom-buds at the Extremity of its Shoots; which if ſhortened, the Fruit would be cut away. There was a Tree of this Kind in the Gardens of *Camden-Houſe*, near *Kenſington*; which generally produced a great Quantity of Fruit.

64. PYRUS *ſativa, fructu brumali turbinato inæquali, ventre tumido,*

partim purpureo, partim flaveſcente. Tourn. Ronville. It is alſo called Hocrenaille and Martin-ſire, *i. e.* The Lord *Martin* Pear. This Pear is about the Size and Shape of a large Rouſſelet; the Eye is of a middling Size, and hollow'd a little; the Middle of the Pear is generally ſwell'd more on one Side than on the other; but is equally extended toward the Stalk; the Skin is very ſmooth and ſoft, and is of a lively-red Colour next the Sun; but on the other Side it changes yellow as it ripens: the Fleſh is breaking, and full of Juice, which is very ſweet, and a little perfum'd; but if grafted on a Quince-ſtock, is very apt to be ſmall and ſtony.

65. Pyrus *ſativa, fructu brumali citriformi flaveſcente duro moſchato odoratiſſimo. Tourn.* Citron d'Hyver, *i. e.* The Winter Citron Pear. It is alſo called the Muſk Orange Pear, in ſome Places. This is a pretty large Pear, in Shape and Colour very like an Orange or Citron, from whence it had its Name: the Fleſh is hard and dry, and very ſubject to be ſtony; for which Reaſons it is not valued as an eating Pear; but will bake very well. It is in Seaſon from *December* to *March*.

66. Pyrus *ſativa, fructu brumali oblongo, e viridi flaveſcente, ſaccharato, ſaporis auſteri. Tourn.* Rouſſelet d' Hyver, *i. e.* The Winter Ruſſelet. This is by ſome ſuppoſed to be the ſame Pear as is called the Dry Martin; but it is very different from that in ſeveral Particulars: the Colour of this is a greeniſh Yellow, inclining to brown; the Stalk is long and ſlender, and the Fleſh is buttery and melting, and generally full of Juice, which is very ſweet; but the Skin is apt to contain an auſtere Juice; ſo that if it be not pared, it is apt to be diſagreeable to many Perſons Palates. It is in eating in *January* and *February*.

67. Pyrus *ſativa Pictavienſis, fructu brumali globoſo ſeſſili ſaccharato odorato. Tourn.* Poire Portail; *i. e.* The Gate Pear. This Pear was diſcovered in the Province of *Poictou*; where it was ſo much eſteemed, that they preferr'd it to moſt other Fruit; tho', in the Opinion of moſt curious Judges, it does not deſerve the great Character which is given to it; for it rarely happens, that it proves good for eating, being generally dry, ſtony, and hard, unleſs in extraordinary Seaſons, and upon a very good Soil. This muſt always be grafted on a Free-ſtock, and ſhould be planted on a light rich Soil; and in very dry Seaſons the Trees ſhould be watered, otherwiſe the Fruit will be ſtony. It is in Seaſon from *January* to *March*, and bakes well.

68. Pyrus *ſativa, fructu brumali magno globoſo flaveſcente, punctis rufis conſperſo. Tourn.* Franc-real. It is alſo called Fin-or d'Hyver, *i. e.* The Golden-end of Winter. This is a very large Pear, almoſt of a globular Figure; the Skin is yellow, ſpotted with red; the Stalk is ſhort, and the Wood of the Tree pith: the Fleſh of this Pear is dry, and very apt to be ſtony; but it bakes exceeding well, and continues good from *January* till *March*.

69. Pyrus *ſativa, fructu brumali turbinato ſeſſili ſubacido flaveſcente, punctis aſperioribus conſperſo. Tourn.* Bergamotte Bugi. It is alſo called Bergamotte de Paſque, *i. e.* The Eaſter Bergamot. It is a large Pear, almoſt round; but is a little produced in Length towards the Stalk; the Eye is flat, and the Skin is green, having many rough Protuberances like Spots diſperſed all over; but, as it ripens, becomes yellowiſh; the Fleſh is breaking, and in a good

Seaſon the Juice is ſweet; but it muſt have a Free-ſtock, and South-eaſt Wall, and have a good Soil; otherwiſe it is apt to be ſtony and auſtere. It is in eating from *February* till *April*.

70. Le Muscat d' Alleman, *i. e.* The *German* Muſcat. This is an excellent Pear, more long than round, of the Shape of the Winter-royal; but is leſs toward the Eye, and is more ruſſet, and of a red Colour next the Sun; it is buttery, melting, and a little muſky. This is in eating in *March*, *April*, and ſometimes in *May*, when it keeps ſo long.

71. Le Bergamotte d' Hollande, *i. e.* The *Holland* Bergamot: it is large and round, of the Shape of the ordinary Bergamot, but a little more produced toward the Stalk. The Colour is greeniſh; the Fleſh is half-buttery and tender; the Juice is highly flavoured. This is a very good Pear, and will keep till *April*.

72. Le Poire de Naples, *i. e.* The Pear of *Naples*. This is a pretty large, long, greeniſh Pear; the Fleſh is half-breaking; the Juice is ſweet, and a little vinous. It is in eating in *March*. I am in doubt whether this Pear is not in ſome Places taken for a *Saint Germain*; for there is a Pear in ſome Gardens very like the *Saint Germain*, which will keep till *April*; and this Pear agrees with the Characters of that. It is called in *England The Eaſter St. Germain*.

73. Pyrus *ſativa, fructu brumali magno pyramidato, e flavo nonnihil rubente. Tourn.* Bon-crêtien d' Hyver, *i. e.* The Winter Bon-crêtien Pear. This Pear is very large and long, of a pyramidal Figure; the Skin is of a yellowiſh Colour; but the Side next the Sun inclines to a ſoft Red; the Fleſh is tender and breaking, and is very full of rich ſugar'd Juice. This is eſteemed in *France* one of the beſt Winter Pears; but in *England* it is ſeldom ſo good; tho' I am fully ſatisfied, if it were grafted on a Free-ſtock, and planted in a good Soil, againſt a Wall expoſed to the South-eaſt, and the Branches train'd at full Length, it might be render'd more acceptable than it is at preſent in *England*.

74. Pyrus *ſativa, fructu brumali magno, cydoniæ facie, partim flavo, partim purpureo. Tourn.* Catillac or Cadillac. This is a large Pear, ſhaped ſomewhat like a Quince; the Skin is, for the moſt part, of a yellow Colour, but changes to a deep Red on the Side next the Sun; the Fleſh is hard, and the Juice auſtere; but it is a very good Fruit for baking; and being a plentiful Bearer, deſerves a Place in every good Collection of Fruit. It will be good from *Chriſtmas* to *April*, or longer.

75. Pyrus *ſativa, fructu brumali oblongo flaveſcente, punctis rubris conſperſo.* La Paſtorelle. This Pear is of the Size and Shape of a fine Rouſſelet; the Stalk is ſhort and crooked; the Skin is ſomewhat rough, of a yellowiſh Colour, ſpotted with Red; the Fleſh is tender and buttery; and when it grows on a dry Soil, the Juice is very ſweet; but on a wet Soil, or in moiſt Years, it is ſubject to have an auſtere Taſte. This Pear is in eating in *February* and *March*.

76. Pyrus *ſativa, fructu brumali ſeſſili, partim flaveſcente, partim purpuraſcente. Tourn.* La Double Fleur, *i. e.* The double-flowering Pear. This is ſo called, becauſe the Flowers have a double Range of Petals or Leaves. It is a large ſhort Pear; the Stalk is long and ſtrait; the Skin is very ſmooth, and of a yellowiſh Colour; but the Side next

the Sun is commonly of a fine red or purple Colour. This is by ſome eſteemed for eating; but it is generally too auſtere in this Country for that Purpoſe. It is the beſt Pear in the World for Baking or Compoſts. It is good from *February* to *May*.

77. PYRUS *ſativa, fructu brumali oblongo, partim flaveſcente, partim purpuraſcente*. Saint Martial. It is alſo called in ſome Places Poire Angelique, *i. e.* The Angelic Pear. This Pear is oblong, in Shape like the Bon-crêtien; but not ſo large, and a little flatter at the Crown; it has a very long Stalk; the Skin is ſmooth and yellowiſh; but on the Side next the Sun it turns to a purpliſh Colour; the Fleſh is tender and buttery, and the Juice is very ſweet. This is in eating in *February* and *March*, and will keep very long.

78. PYRUS *ſativa, fructu brumali oblongo, partim albido, partim purpureo odorato, ſaccharato*. La Poire de Chaumontelle, or Beſi de Chaumontelle, *i. e.* The Wilding of *Chaumontelle*. This Pear is in Shape ſomewhat like the Autumn Beurré, but is flatter at the Crown: the Skin is a little rough, of a pale-green Colour; but turns to a purpliſh Colour next the Sun; the Fleſh is melting; the Juice is very rich, and a little perfum'd. It is in eating from *November* to *January*; and is eſteemed by ſome as the beſt late Pear yet known.

79. PYRUS *ſativa, fructu brumali globoſo ſeſſili cinereo, maculis amplis obſcurioribus conſperſo. Tourn.* Carmelite. This is a middle-ſiz'd Pear, of a roundiſh Form; the Skin is of a grey Colour on one Side; but is inclining to a red on the other, having ſome broad Spots of a dark Colour all over; the Fleſh is commonly hard and dry, ſo that it is not very much eſteemed: it is in Seaſon in *March*.

80. PYRUS *ſativa, fructu brumali maximo pyramidato, diluto virente*. The Union Pear; otherwiſe called Dr. *Uvedale*'s St. Germain. This is a very large long Pear, of a deep-green Colour; but the Side next the Sun doth ſometimes change to a red as it ripens. This is not fit for eating, but bakes very well; and being a great Bearer, and a very large Fruit, deſerves a Place in every good Collection. It is in Seaſon from *Chriſtmas* to *April*.

There are many other Sorts of Pears, which are ſtill continued in ſome old Gardens; but as thoſe here mentioned are the beſt Sorts known at preſent, it would be needleſs to enumerate a great Quantity of ordinary Fruit; ſince every one who intends to plant Fruits, will rather chooſe thoſe which are the moſt valu'd, the Expence and Trouble being the ſame for a bad Sort of Fruit as a good one. Indeed I have inſerted many more than are really worth planting, in order to pleaſe ſuch who are fond of a great Variety: but whoever hath a mind to make choice of ſuch only as are good, may eaſily diſtinguiſh them, by attending to the Account given of each Sort; and hereby every Perſon is at Liberty to pleaſe himſelf; for it is not every one who prefers a Beurré Pear, tho' that is generally eſteemed the very beſt in its proper Seaſon: there are ſome who admire the Meſſire Jean for the Firmneſs of its Fleſh, which to others is a great Objection againſt it; ſo that as ſome eſteem the breaking, and others the melting Pears, I have diſtinguiſhed them by their Deſcriptions in ſuch a manner, that every one may make choice of the Kinds of Fruit which are agreeable to their

Palates; and the different Seaſons in which each Kind is in eating, being exhibited (allowing a little for the Difference of Seaſons, which are earlier ſome Years than others), it is not very difficult for a Perſon to make a Collection of good Pears to ſucceed each other throughout the Seaſon of theſe Fruits, both for eating and baking.

The Time of each Fruit ripening, as here ſet down, is taken at a Medium for ſeven Years, and in the Neighbourhood of *London*, where all Sorts of Fruit generally ripen a Fortnight or three Weeks earlier than in almoſt any Part of *England*; and it is very obvious to every Perſon, who will attend to the Culture of Fruit-trees, that their Time of ripening is accelerated by long Cultivation; for many of the Sorts of Pears, which ſome Years paſt rarely became ripe in *England*, unleſs they grew againſt the beſt-aſpected Walls, are now found to ripen extremely well on Eſpaliers and Dwarfs; and thoſe Pears which ſeldom were in eating till *January*, are ripe two Months earlier: there is alſo a very great Difference in their time of ripening in different Seaſons; for I have known the Fruit of a Pear-tree in one Year all ripe and gone by the Middle of *October*; and the very next Year the Fruit of the ſame Tree has not been fit to eat till the End of *December*; ſo that Allowance ſhould be made for theſe Accidents. The Beſi de Chaumontelle Pear, about thirty Years paſt, was ſeldom fit to eat before *February*; and has continued good till the Middle of *April*: but now this Pear is commonly ripe in *November*; and when it is planted on a warm Soil, and againſt a good-aſpected Wall, it is in eating the Middle of *October*. This forwarding of the ſeveral kinds of Pears may be in ſome meaſure owing to the Stocks upon which they are grafted; for if they are grafted upon early Summer Pear-ſtocks, they will ripen much earlier than when they are upon hard Winter Pear-ſtocks: and if ſome of the very ſoft melting Pears were grafted upon ſuch Stocks as are raiſed from the moſt auſtere Fruit, ſuch as are never fit to eat, and of which the beſt Perry is made, it would improve thoſe Fruits, and continue them much longer good; or if the common Free-ſtocks were firſt grafted with any of theſe hard Winter Pears, and when they have grown a Year, then to graft or bud theſe ſoft melting Pears upon them, it would have the ſame Effect; but the Pears ſo raiſed will require a Year's more Growth in the Nurſery; and conſequently cannot be ſold at the ſame Price as thoſe which are raiſed in the common Method, theſe requiring to be twice budded or grafted; ſo that there is double Labour, beſide ſtanding a full Year longer: but this Difference in the firſt Expence of the Trees is not worth regarding by any Perſon who is deſirous to have good Fruit: for the ſetting out in a right way is that which every one ſhould be the moſt careful of; ſince by miſtaking at firſt, much time is loſt; and an After-expence of new Trees often attends it.

Another Cauſe of Fruits ripening earlier now, than they formerly did, may be from the Length of time they have been cultivated; for it is very certain, that moſt Sorts of Plants have been greatly forwarded and improved by Culture, within the Space of thirty or forty Years, as may be known from the ſeveral Sorts of eſculent Plants, which are cultivated in the Kitchen-gardens; and of which Sorts there are many which are annually improving: and if we look back to the beſt *French* Authors, who have written on the Subject of Fruit-trees, we ſhall find, that the times of ripening of many Sorts of Pears are put down a Month or ſix Weeks later about fifty Years ago, than they are now found to ripen about *Paris*: and here about *London* it is much the ſame; for I cannot find they are the leaſt forwarder in the times of their ripening at *Paris*, than at *London*.

The ripening of theſe Fruits may alſo be accelerated by the Method of pruning and managing theſe Trees, which are greatly improved within the Space of a few Years paſt; for if we look into the Directions which are given by the beſt Writers on this Subject, we ſhall ſoon diſcover how little they knew forty Years ago, of the true Method of pruning and managing all Sorts of Fruit-trees, ſcarce one of them making any Difference in the Management of the different Kinds of Fruit.

Pears are propagated by budding or grafting them upon Stocks of their own Kind, which are commonly called Free-ſtocks, or upon Quince-ſtocks, or White-thorn; upon all which theſe Fruits will take; but the latter Sort of Stock is now ſeldom uſed, becauſe they never keep Pace in their Growth with the Fruit budded or grafted upon them; as alſo becauſe the Fruit upon ſuch Stocks are commonly drier, and more apt to be ſtony, than when they are upon Pear-ſtocks. Quince-ſtocks are greatly uſed in the Nurſeries for all Sorts of Pears which are deſigned for Dwarfs or Walls, in order to check the Luxuriancy of their Growth, ſo that they may be kept within Compaſs better than upon Free-ſtocks. But againſt the general Uſe of theſe Stocks, for all Sorts of Pears indifferently, there are very great Objections: 1ſt, Becauſe ſome Sorts of Pears will not thrive upon theſe Stocks, but in two or three Years will decay, or at moſt will but juſt keep alive. 2dly, Moſt of the Sorts of hard breaking Pears are rendered ſtony, and good for little; ſo that whenever any of theſe Sorts are thus injudiciouſly raiſed, the Fruit, altho' the Kind be ever ſo good, is condemn'd as good for nothing, by ſuch as are not well acquainted with it, when the Fault is intirely owing to the Stock on which it was grafted. On the contrary, moſt melting buttery Pears are greatly improved by being upon Quince-ſtocks, provided they are planted on a ſtrong Soil: but if the Ground be very dry and gravelly, no Sort of Pear will do well upon Quince-ſtocks in ſuch Places.

Theſe general Directions being given, there is no Occaſion to repeat any Part of the Method in which theſe Stocks are raiſed, and the Fruits budded or grafted thereon; which has been already mentioned under the Article of *Nurſeries*.

The Diſtance which theſe Trees ſhold be planted either againſt Walls or Eſpaliers, muſt not be leſs than thirty Feet: but if they are planted forty Feet, it will be better; for if they have not room to ſpread on each Side, it will be impoſſible to preſerve them in good Order, eſpecially thoſe on Free-ſtocks; for the more theſe Trees are pruned, the more they will ſhoot; and, as I before ſaid, many Sorts of Pears produce their Bloſſom-buds firſt at the Extremity of the former Year's Shoots, ſo that when they are ſhorten'd, the Fruit will be cut away; and this cannot be avoided, where the Trees have not room allow'd in their firſt planting.

This Diſtance, I doubt not, will be objected to, by many who have not fully attended to the Growth of theſe Trees; eſpecially as it hath been the general Practice of moſt Gardeners, to plant theſe Trees at leſs than half the Diſtance which is here mention'd: but whoever will be at the Trouble to view any of theſe Trees which have been ſome Years ſtanding, will always find, where by Accident one of theſe Trees has been planted againſt a Building, where the Branches have had room to ſpread, that this Tree has produc'd more Fruit than twelve Trees which have been crouded cloſe, and have not had room for their Branches to extend. There are ſome Pear-trees now growing which ſpread more than fifty Feet in Length, and are upward of twenty Feet high, which produce a much greater Quantity of Fruit than, if there had been three Trees theywolud have done, in the ſame room, as there are Examples enough to prove, where Trees are planted againſt Houſes, and the Ends of Buildings, at about twelve Feet, or much leſs Diſtance; becauſe there is Height of Walling for them to grow: which is the Reaſon commonly given by thoſe who plant theſe Trees ſo cloſe together. But one Tree will bear more Fruit, when the Branches are train'd horizontally, than three or four Trees, whoſe Branches are led upright: and there never can be any Danger of the upper Part of the Wall being left naked or unfurniſh'd; for I have ſeen a Pear-tree which has ſpread more than fifty Feet in Width, and cover'd the Wall upward of thirty-ſix Feet in Height. This was a Summer *Bon-crêtien* Pear, and was extremely fruitful, which rarely happens to this Sort when they are not allow'd a large Share of room. The fineſt Tree of this Sort of Pear which I ever have ſeen, was a large Standard-tree, in my own Poſſeſſion, whoſe Stem was not more than ten Feet high, where the Branches came out regularly on every Side, and extended near thirty Feet from the Trunk, many of which were by the Weight of the Fruit in Summer brought down to the Ground; ſo were obliged to be ſupported with Poles all around the Tree toward the Extremity of the Branches, to prevent their lying upon the Ground; and this Tree had its Branches ſo diſpos'd as to form a natural Parabola of forty Feet in Height, bearing from the loweſt to the higheſt Branches: ſo that in a kindly Seaſon, when the Bloſſoms eſcaped the Froſt, it hath produc'd upward of two thouſand Pears; which were much better flavour'd than any of the ſame Sort, which I have yet taſted. This Inſtance I mention, only to ſhew how much one of theſe Trees will ſpread, if proper room is allowed it; and alſo to obſerve, that as the Branches of this Tree had never been ſhorten'd, ſo they were fruitful to their Extremities. This ſhews the Abſurdity of the *French* Gardeners, who do not allow more than ten or twelve Feet Diſtance to theſe Trees; and ſome of their moſt approved Writers on this Subject have adviſed the planting an Apple-tree between the Pear-trees, where they are allowed twelve Feet; and yet theſe Authors afterward ſay, that a good Pear-tree will ſhoot three Feet each Way in one Year: therefore, according to their own Account, the Trees ſo planted muſt have their Branches meet together in two or three Years at moſt; and what muſt be the Caſe with ſuch Trees, in five or ſix Years, is not difficult to know. But this Method of Planting has not been peculiar to the *French*; for moſt of the Gardens in *England* have been little better planted. Indeed, thoſe Perſons who were intruſted with the making and planting moſt of the *Engliſh* Gardens, had little Skill of their own; ſo were obliged to follow the Directions of the *French* Gardeners; of whom they had ſo great an Opinion, as to get their Books tranſlated; and to theſe have added ſome trifling Notes, which rather betrays their Weakneſs: for where they have objected to the little room which their Authors had allowed to theſe Trees, they have, at the moſt, allow'd them but three Feet more: from which it is plain, they had not conſider'd the natural Growth of the Trees; and whoever departs from Nature, may be juſtly pronounc'd an unſkilful Gardener.

As moſt of the *Engliſh* Gardens have been made and planted by Perſons of little Judgment, it is very rare to find any of them which produce much Fruit; for although many of theſe Gardens have been totally altered, and new-planted, yet they have ſeldom been much alter'd for the better; and the Poſſeſſors have been put to the Expence of removing the old Trees, alſo the Earth of their Borders, and to purchaſe new Trees, which have been planted perhaps a Foot or two farther aſunder, than the old Trees, which were remov'd: ſo that when the young Trees have grown a few Years, they were in the ſame Condition as the old, and it has been the Loſs of ſo many Years to the Owner. But this will conſtantly be the Caſe, when it is the Intereſt of the Perſons employ'd, who can ſell ſo many young Trees; and the planting of three times the Number of Trees in a Garden, more than is proper, may in ſome meaſure be aſcrib'd to the ſame; though, in many Inſtances, I ſhould be inclinable to think it has proceeded from Ignorance, rather than Deſign.

But where Fruit-trees have been thus injudiciouſly planted, if the Stocks are healthy and good, the beſt way to recover this Loſs is, to dig up two or three, and leave every third or fourth Tree, according to the Diſtance which they were planted; and ſpread down the Branches of thoſe which are left horizontally, I mean, all ſuch as are capable of being ſo brought down; but thoſe which are too ſtubborn for this, ſhould be cut off near the Stem, where there will be new Shoots enough produced to furniſh the Wall or Eſpalier: and if the Sort of Fruit is not the ſame as deſired, the young Branches may be budded the ſame Summer, or grafted the following Spring, with any other Sort of Pear; and hereby many Years may be ſaved; for one of theſe old Trees will ſpread to a much greater Length, and produce more Fruit, when thus managed, in three Years, than a new Tree will in ten or twelve; eſpecially if the Ground is mended. This is a Method which I have practiſed with great Succeſs, where I have been employed to amend the Blunders of theſe great Gardeners, as they are ſtiled; and hereby the Walls and Eſpaliers have been well furniſh'd in a few Years.

But the next thing to be done, after being furniſh'd with proper Trees, is the preparing of the Ground to receive them; in doing which, there ſhould be great Regard had to the Nature of the Soil where the Trees are to grow: for if it is a ſtrong ſtiff Land, and ſubject to Wet in the Winter, the Borders ſhould be raiſed as much above the Level of the Ground as you conveniently can. And if under the good Soil there is a ſufficient Quantity of Lime, Rubbiſh, or Stones, laid, to prevent the Roots of the Trees from running downward, it will be of great Service to the Trees. The Borders for theſe ſhould not be leſs than eight Feet broad; but if they are twelve, it will be ſtill better. And as theſe Borders may be planted with ſuch Sorts of eſculent Plants as do not grow large, or whoſe Roots do not grow deep, or mat together on the Surface, theſe will do no Harm to the Pear-trees; for theſe are not ſo nice in their Culture as Peach and Nectarine-trees; ſo the turning of the Ground, and mending of it, for theſe Crops, will rather improve, than injure the Trees; provided the Plants do not ſhade the Trees, or are not ſuffer'd to ſtand too long upon the Borders. But all the Cabbage-kind, as alſo Beans, ſhould be excluded from theſe Borders; becauſe they root deep in the Ground, and draw much Nouriſhment from the Trees.

But if the Soil is ſhallow, and the Bottom is either Gravel or Chalk, there muſt be a ſufficient Depth of good Earth laid upon the Borders, ſo as to make them two Feet and an half deep; for if the Ground is not of this Depth, the Trees will not thrive well. And in doing of this, I muſt caution every Perſon not to dig out the Gravel in a Trench (as is by ſome practis'd), and fill this Trench with good Earth; for by ſo doing, when the Roots of the Trees are extended to the Width of the Trench, they will meet with the Gravel, which will ſtop them; ſo that they will be confin'd, as if they were in Tubs of Earth, whereby the Trees will be ſoon ſpoiled: therefore when the Gravel or Chalk is removed, it ſhould be intirely taken away over the whole Garden: otherwiſe it will be better to raiſe the whole Border above it.

If the Garden is to be new-made from a Field, then all the good Earth on the Surface ſhould be carefully preſerved; and if the good Ground is taken out where the Walks are deſign'd to be made, and laid upon the Borders, or in the Quarters, it will add to the Depth of the Soil, and ſave Expence in bringing in of new Earth. If the Ground can be prepared one Year before it is planted, the Trees will thrive the better; for by laying the Ground in Ridges, and turning it over two or three times, it will looſen the Soil, and render it much better for planting: but in trenching, or plowing of the Ground, there ſhould be great Care taken not to go deeper than the Ground is good; otherwiſe all the good Soil will be buried below the Roots, and the bad Ground will be turned on the Top; which is what I have known done at a great Expence, by Perſons who have been at the Top of their Profeſſion, and have thereby intirely ruin'd the Gardens.

Where there is a Neceſſity of bringing in any freſh Earth for the Borders, it will be proper to do it as ſoon as poſſible, and to mix this with the Surface-earth of the Borders, that it may be turned over two or three times, that the Parts may be well mixed and incorporated, before the Trees are planted; and if ſome very rotten Dung is added to this, it will greatly improve it. In chooſing of the Earth which is to be brought into the Garden, there ſhould be this Care; *viz.* that if the natural Soil of the Garden is light and dry, then the new Earth ſhould be loamy and ſtiff: but where the natural Soil is ſtrong or loamy, then the new Earth ſhould be light and ſandy, which will looſen the Parts of the natural Soil, and greatly mend it.

There are ſome Perſons who recommend the laying the whole Depth of the Borders with what they call Virgin-earth; that is, ſuch as is taken from a Paſture where the Land has not been plowed. But if this is not brought into the Garden at leaſt one Year before the Trees are planted, that by turning it over often it may be ſweeten'd, it will not be ſo good as that which is taken from a Kitchen-garden, or an arable Field, where the Land is good, and has been well wrought; for by often turning and breaking of the Soil, it will be the better prepar'd to receive the Trees.

Others recommend the mixing a great Quantity of rotten Dung with the Earth of the Borders; but this is not ſo proper; for by making of the Ground too rich, it will only encourage the luxuriant Growth of the Trees: therefore it is always better to mend the Borders from time to time, as they may require, and not to add ſo much Dung in the firſt making them.

Another Care is required, in the making of the Borders on wet Ground; which is to contrive ſome cover'd Drains to convey off the Water in Winter; otherwiſe, by this being detain'd about the Roots of the Trees, it will greatly prejudice them; and in the building of the Walls round a Kitchen-garden, where the Ground is inclinable to be wet, there ſhould be ſome Arches turn'd in the Foundations of thoſe Walls which are in the loweſt Part of the Garden, to let off the Wet.

The manner of preparing theſe Trees for Planting is the ſame as hath been directed for other Fruit-trees; *viz.* To cut off all the ſmall Fibres from the Roots, and to ſhorten ſome of the longeſt Roots, and cut off all the bruiſed ones, or ſuch as ſhoot downright: this being done, you ſhould plant them in the Places intended, at the before-mention'd Diſtance. The beſt time to plant theſe Trees (if upon a middling or dry Soil) is in *October*, leaving their Heads on till Spring; which ſhould be faſten'd to the Walls or Stakes, to prevent the Wind from diſturbing their Roots; and in the Beginning of *March* their Heads ſhould be cut off, in the manner already directed for Peaches, and other Fruit-trees; obſerving alſo to lay ſome Mulch upon the Surface of the Ground about their Roots when they are planted; as hath been ſeveral times already directed for other Trees.

The firſt Summer after planting, the Branches ſhould be trained to the Wall or Eſpalier (againſt which they are planted) in an horizontal Poſition, as they are produced, without ſhortening of them; and the *Michaelmas* following ſome of theſe Shoots ſhould be ſhorten'd down to five or ſix Eyes, in order to obtain a ſufficient Quantity of Branches, to furniſh the lower Part of the Wall or Eſpalier. But when this is done, the Shoots ought not to be ſhorten'd, unleſs where there is a want of Branches to fill a Vacancy; therefore the leſs the Knife is uſed to theſe Trees, the better they will ſucceed: for whenever the Shoots are ſtopp'd, it occaſions the Buds immediately below the Cut to ſend forth two or more Shoots, whereby there will be a Confuſion of Branches; and rarely any Fruit is produced with this Management.

The Diſtance which the Branches of Pears ſhould be train'd, muſt be proportion'd to the Size of their Fruit.

Such Sorts whoſe Fruit are ſmall, may be allow'd five or ſix Inches; but the larger Sorts muſt not be leſs than ſeven or eight Inches aſunder. If this be duly obſerv'd, and the Branches carefully train'd horizontally as they are produc'd, there will be no Occaſion for ſo much cutting as is commonly practiſ'd on theſe Trees; which, inſtead of checking their Growth, does, on the contrary, cauſe them to ſhoot the ſtronger.

It is very ſurpriſing to read the tedious Methods which moſt of the Writers on Fruit-trees have directed for pruning of theſe Trees; for, by their prolix and perplexed Methods, one would imagine they had endeavour'd to render themſelves as unintelligible as poſſible: and this, I am ſure, may be affirm'd, That it is next to impoſſible for a Learner ever to arrive at any tolerable Skill in pruneing, by the tedious and perplexed Directions which are publiſh'd by Monſieur *Quintiney*, and thoſe who have copied from him; for as theſe have all ſet out wrong in the Beginning, by allowing their Trees leſs than half the Diſtance which they ſhould be planted, ſo they have preſcribed Rules to keep them within that Compaſs; which are the moſt abſurd, and contrary to all Reaſon; therefore ſhould not be practiſed by thoſe Perſons who are deſirous of having plenty of Fruit.

I ſhall therefore only lay down a few neceſſary Directions for the pruning and managing of theſe Trees; which ſhall be done in as few Words as poſſible, that a Learner may the more eaſily underſtand it; and which (together with proper Obſervations) will be ſufficient to inſtruct any Perſon in the right Management of them.

Pear-trees generally produce their Bloſſom-buds firſt at the Extremity of the laſt Year's Shoots; ſo that if theſe are ſhortened, the Bloſſoms are cut off. But this is not all the Damage; for (as I before ſaid) this occaſions the Buds immediately below the Cut to put forth two or more Shoots, whereby the Number of Branches will be increaſed, and the Tree crouded too much with Wood; beſides, thoſe Buds, which by this Management produce Shoots, would have only produc'd Curſons and Spurs, upon which the Bloſſom-buds are produced, if the leading Branch had not been ſhorten'd; therefore theſe ſhould never be ſtopp'd, unleſs to furniſh Wood to fill a Vacancy.

It is not neceſſary to provide a new Supply of Wood in Pear-trees, as muſt be done for Peaches, Nectarines, *&c.* which only produce their Fruit upon young Wood; for Pears produce their Fruit upon Curſons or Spurs, which are emitted from Branches which are three or four Years old; which Curſons continue fruitful many Years: ſo that where theſe Trees have been ſkilfully manag'd, I have ſeen Branches which have been trained horizontally, upward of twenty Feet from the Trunk of the Tree, and have been fruitful their whole Length. And if we do but carefully obſerve the Branches of an healthful Standard-tree, which has been permitted to grow without pruning, we ſhall find many that are ten or twelve Years old, or more, which are very full of theſe Curſons; upon which a good Number of Fruit is annually produc'd.

During the Summer-ſeaſon theſe Trees ſhould be often look'd over, to train in the Shoots, as they are produc'd, regularly, to the Wall or Eſpalier, and to diſplace fore-right and luxuriant Branches as they ſhoot out; whereby the Fruit will be equally expoſed to the Air and Sun, which will render them more beautiful, and better taſted, than when they are ſhaded by the Branches; and by thus managing the Trees in Summer, they will always appear beautiful; and in Winter they will want but little pruneing.

Where Pear-trees are thus regularly train'd, without ſtopping of their Shoots, and have full room for their Branches to extend on each Side, there will never be any Occaſion for diſbarking of the Branches, or cutting off the Roots (as hath been directed by ſeveral Writers on Gardening); which Methods, however they may anſwer the Intention for the preſent, yet will certainly greatly injure the Trees; as muſt all violent Amputations, which ſhould ever be avoided, as much as poſſible, on Fruit-trees; and this, I am ſure, can never be wanted, where Trees have been rightly planted, and regularly trained, while young.

The Seaſon for pruning of theſe Trees is any time after the Fruits are gathered, until the Beginning of *March*; but the ſooner it is done, after the Fruit is gather'd, the better, for Reaſons already given for pruning of Peach-trees; though indeed, the deferring of theſe until Spring, where there are large Quantities of Trees to prune, is not ſo injurious to them, as to ſome more tender Fruits: but if the Branches are regularly train'd in the Summer, and the luxuriant Shoots rubb'd off, there will be little left to do to them in Winter.

All the Sorts of Summer Pears will ripen very well, either on Standards, Dwarfs, or Eſpaliers; as will all the Autumn Pears, upon Dwarfs or Eſpaliers; but where a Perſon is very curious in his Fruit, I would always adviſe the planting them againſt Eſpaliers; in which Method they take up but little room in a Garden, and, if they are well manag'd, appear very beautiful; and the Fruit is larger and better-taſted than thoſe produc'd on Dwarfs, as hath been already obſerv'd: but ſome of the Winter Pears muſt be planted againſt Eaſt, South-eaſt, or South-weſt Walls; otherwiſe they will not ripen well in *England*, in bad Seaſons.

But altho' this may be the Caſe with ſome of the late Winter Pears, in very bad Seaſons; yet, in general, moſt Sorts of them will ripen extremely well in all warm Situations, when they are planted in Eſpalier; and the Fruit will be better flavour'd than that which grows againſt Walls, and will keep much longer good: for as the Heat againſt Walls which are expoſed to the Sun, will be very great at ſome times, and at others there will be little Warmth; ſo all Fruits which grow near them, will be haſten'd unequally; and therefore is never ſo well-flavour'd as the ſame Sorts are which ripen well in the open Air: and all the Fruit which is ripen'd thus unequally, will decay much ſooner than thoſe which ripen gradually in the open Air: therefore thoſe Winter Pears which grow in Eſpalier, may be kept ſix Weeks longer than thoſe which grow againſt Walls; which is a very deſirable thing. For to have plenty of theſe Fruit, at a Seaſon when it is very rare to find any other Fruit to ſupply the Table but Apples, is what all Lovers of Fruit muſt be greatly pleas'd to enjoy: which is what may be effected, by planting many of the late Sorts in Eſpalier; where, although the Fruit will not be ſo well colour'd as thoſe from the Walls, yet they will be found exceeding good. When the

Beſt du Chaumontelle came firſt to *England*, the Trees were planted in Eſpalier; and ſome of them not on a very good Soil, or in a warm Situation; and yet from theſe Trees I have eaten this Pear in great Perfection in *April*, and ſometimes it has kept till *May*; whereas all thoſe which have been ſince planted againſt Walls, ripen their Fruit by the Beginning of *November*, and are generally gone by the Middle of *December*; nor are theſe latter ſo well taſted as thoſe of the Eſpaliers.

The *Virgouleuſe* and *St. Germain*, as alſo the *Colmar*, are eſteem'd the moſt difficult Sorts to ripen their Fruit: yet theſe I have eaten in great Perfection from Eſpaliers, and often from Standard-trees, where they grew upon a warm Soil; but the Fruit was much ſmaller on the Standard-trees, than thoſe of the ſame Sorts which grew againſt Walls or Eſpaliers; but they were full as well-flavour'd. And ſome of theſe Sorts I have eaten good in *April*, which is two Months later than theſe Sorts uſually keep. But yet I would not adviſe the planting of theſe late Pears in Standards, becauſe they ſhould hang very late on the Trees in the Autumn; at which Seaſon, the Winds are generally very high, and theſe Standard-trees being much expos'd, the Fruit is often blown off the Trees before they are ripe; and thoſe of them which may hang on the Trees, are frequently bruiſed by being forc'd againſt the Branches by the Winds, ſo that they ſeldom keep well. What I mention'd this for, is to prove, that theſe Pears will ripen very well without the Aſſiſtance of a Wall; ſo that if they are planted in Eſpaliers, where the Trees are kept low, the Fruit will not be ſo much expos'd to the ſtrong Winds in the Autumn, as thoſe on the Standards; therefore can be in no Danger of the Fruit coming to Perfection. And as the Trees in Eſpalier will be conſtantly pruned, and manag'd in the ſame manner as thoſe againſt Walls, ſo the Fruit will be as large on thoſe Trees: therefore where a Perſon has a warm Situation, and a kindly Soil, I would not adviſe the being at an Expence to build Walls on purpoſe for Pears, but to plant them againſt Eſpaliers; and where there is any one who is very curious in having plenty of theſe Fruit, and will be at ſome Expence to procure them, I ſhould adviſe the having a ſufficient Quantity of Reed Mats made, to fix up againſt the Back of the Eſpalier in the Spring, when the Trees are in Bloſſom; which will ſcreen them from cold Winds, and preſerve the tender Fruit until they are paſt Danger; when the Reeds may be taken down, and put under a Shed to preſerve them from the Weather. And if the Autumn ſhould prove bad, theſe Reeds may be fix'd up again, which will forward the ripening of the Fruit, and alſo prevent the Winds from blowing down, and bruiſing of it. Theſe Reeds may be purchas'd for one Shilling *per* Yard, running Meaſure, at ſix Feet and an half high; and if they are carefully laid up, and kept from the Weather, theſe Reeds will laſt ſeven or eight Years; ſo that the Expence will not be very great: and when the Advantages which theſe are of to the Fruit are conſider'd, I believe no Perſon will object to the Uſe of them.

But after the Fruit is ſet, and growing, there will be farther Care neceſſary in order to have the Fruit good; for it is not enough to have preſerved a good Crop of Fruit on the Trees, and then to leave them intirely to Nature, during the Seaſon of their Growth; but there will require ſome Skill and Attendance on the Trees, to help Nature, or ſupply the Deficiency of the Seaſons: for beſide the pruning and training the Trees, in the manner before directed, there will alſo be wanting ſome Management of their Roots, according to the Nature of the Soil, and the Difference of Seaſons. In all ſtrong Land, where the Ground is apt to bind very hard in dry Weather, the Surface of the Borders ſhould be now-and-then forked over, to looſen the Earth; which will admit the Showers, and large Dews, to penetrate and moiſten the Ground, and be of great Service to the Trees and Fruit, and alſo prevent the Growth of Weeds. And if the Soil is light and dry, and the Seaſon ſhould prove hot and dry, there ſhould be large Hollows made round the Stems of the Trees, to hold Water; and into each of theſe there ſhould be poured eight or nine Pots of Water; which ſhould be repeated once a Week during the Months of *June* and *July*, if the Seaſon ſhould continue dry. There ſhould alſo be ſome Mulch laid over the Surface of theſe Hollows, to prevent the Sun and Air from drying the Ground. Where this is practis'd, the Fruit will be kept conſtantly growing, and prove large and plump; whereas, if this is omitted, the Fruit will often be ſmall, grow crooked, crack, and fall off from the Trees. For if the Fruit is once ſtinted in their Growth, and Rain ſhould fall plentifully after, it will occaſion a great Quantity of the Fruit to fall off the Trees; and thoſe which remain to ripen, will not keep ſo long, as thoſe which never receive any Check in their Growth; and it is from this Cauſe, that ſome Years the Fruit in general decays before the uſual time. For after it has been for ſome time ſtinted in its Growth, and then the Seaſon proves favourable, whereby it receives a ſudden Growth, it becomes ſo replete with Juice, as to diſtend the Veſſels, whereby a Mortification often enſues: therefore it is always beſt to keep the Fruit conſtantly in a growing State, whereby it will acquire a proper Size, and be rendered better flavour'd.

There will alſo require ſome Dreſſing to the Ground near the Fruit-trees; but this ſhould be laid on in Autumn, after the Trees are pruned. This Dreſſing ſhould be different, according to the Nature of the Soil: if the Land is warm and dry, then the Dreſſing ſhould be of very rotten Dung, mixed with Loam; and if this is mixed ſix or eight Months before it is laid upon the Borders, and three or four times turned over, it will be the better: as will alſo the Mixture, if it is made with Neats-dung, or Hog-dung; both which are colder than Horſe-dung, ſo more proper for an hot Land. But in cold ſtiff Land, rotten Horſe-dung, mixed with light ſandy Earth, or Sea-coal Aſhes, will be the moſt proper, as this will looſen the Ground, and add a Warmth to it.

Theſe Dreſſings ſhould be repeated every other Year, otherwiſe the Trees will not thrive ſo well, nor will the Fruit be ſo good. For, notwithſtanding what many Perſons have advanced to the contrary, yet Experience is againſt them; for the fineſt Fruit in *England*, both as to Size and Flavour, is produced on Land which is the moſt dunged and worked. Therefore I would adviſe the trenching of the Ground about the Fruit-trees very well every Winter; for I am ſure they will find it anſwer their Expectations, who will practiſe this Method. And where the Ground in the Quarters is well dreſſed and trenched, the Fruit-trees will partake of the Benefit; for as the Trees advance in their Growth, ſo their Roots are extended to a great Diſtance from their Stems; and it is chiefly from the diſtant Roots that the Trees are ſupplied with their Nouriſhment; therefore the dreſſing of the Borders only, will not be ſufficient for Fruit-trees which are old.

In the gathering of the Pears, great Regard ſhould be had to the Bud which is form'd at the Bottom of the Foot-ſtalk, for the next Year's Bloſſoms; which, by forcing off the Pear before it be mature, is, many times, ſpoil'd; for while the Fruit is growing, there is always a Bud form'd by the Side of the Footſtalk, upon the ſame Spur, for the next Year's Fruit; ſo that when the Pears are ripe, if they are gently turn'd upward, the Footſtalk will readily part from the Spur, without injureing the Bud.

The Seaſon for gathering all Summer Pears is juſt as they ripen; for none of theſe will remain good above a Day or two after they are taken from the Tree: nor will many of the Autumn Pears keep good above ten Days, or a Fortnight, after they are gathered. But the Winter-fruits ſhould hang as long upon the Trees as the Seaſon will permit; for they muſt not receive the Froſt, which will cauſe them to rot, and render their Juices flat, and ill-taſted: but if the Weather continues mild until the Middle of *October*, it will then be a good Seaſon for gathering them in; which muſt always be done in dry Weather, and when the Trees are perfectly dry.

In the doing of this, you ought carefully to avoid bruiſing them; therefore you ſhould have a broad flat Baſket to lay them in as they are gather'd; and when they are carried into the Store-room, they ſhould be taken out ſingly, and each Sort laid up in a cloſe Heap, on a dry Place, in order to ſweat, where they may remain for ten Days, or a Fortnight; during which time the Windows ſhould be open, to admit the Air, in order to carry off all the Moiſture which is perſpired from the Fruit: after this, the Pears ſhould be taken ſingly, and wiped dry with a woollen Cloth, and then pack'd up in cloſe Baſkets; obſerving to put ſome ſweet Wheat-ſtraw in the Bottoms, and round the Sides of the Baskets, to prevent their bruiſing againſt the Baskets. And if ſome thick ſoft Paper is laid double or treble all round the Basket, between the Straw and the Pears, this will prevent the Pears from imbibing the muſty Taſte which is communicated to them by the Straw, when they are contiguous; which Taſte often penetrates thro' the Skin ſo ſtrongly, that when the Fruit is pared, the Taſte will remain. You ſhould alſo obſerve to put but one Sort of Fruit into a Basket, leſt, by their different Fermentations, they ſhould rot each other; but if you have enough of one Sort to fill a Basket which holds two or three Buſhels, it will be ſtill better. After you have fill'd the Baskets, you muſt cover them over with Wheat-ſtraw very cloſe; firſt laying a Covering of Paper two or three times double over the Fruit, and faſten them down; then place theſe Baskets in a cloſe Room, where they may be kept dry, and from Froſt; but the leſs Air is let into the Room, the better the Fruit will keep. It will be very neceſſary to fix a Label to each Basket, denoting the Sort of Fruit therein contain'd; which will ſave the Trouble of opening them, whenever you want to know the Sorts of Fruit: beſides, they ought not to be open'd before their Seaſon to be eaten; for the oftener they are open'd, and expos'd to the Air, the worſe they will keep. I don't doubt but this will be objected to by many, who imagine Fruit can't be laid too thin; for which Reaſon, they make Shelves to diſpoſe them ſingly upon, and are very fond of admitting freſh Air, whenever the Weather is mild, ſuppoſing it very neceſſary to preſerve the Fruit: but the contrary of this is found true, by thoſe Perſons who have large Stocks of Fruit laid up in their Storehouſes in *London*, which remain cloſely ſhut up for ſeveral Months, in the manner before related; and when theſe are open'd, the Fruit is always found plumper and ſounder than any of thoſe Fruits which were preſerv'd ſingly upon Shelves, whoſe Skins are always ſhrivell'd and dry. For (as Mr. *Boyle* obſerves the Air is the Cauſe of Putrefaction; and, in order to prove this, that honourable Perſon put Fruits of ſeveral Kinds into Glaſſes where the Air was exhauſted, in which Places they remained ſound for ſeveral Months; but, upon being expos'd to the Air, rotted in a very ſhort time; which plainly ſhews the Abſurdity of the common Method now uſed to preſerve Fruit.

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QUAMOCLIT, Bindweed.

The *Characters* are;

The Flower conſiſts of one Leaf, ſhaped like a Funnel, and divided at the Top into ſeveral Segments: from the Flower-cup riſes the Pointal, which afterward becomes a roundiſh Fruit, incloſing ſeveral oblong Seeds.

We have but one *Species* of this Plant in *England*; which is,

QUAMOCLIT *foliis tenuiter inciſis, & pennatis. Tourn.* Quamoclit with very fine-cut winged Leaves, commonly call'd, in *Barbadoes*, Sweet William.

This Plant is very common in *Jamaica*, *Barbadoes*, and the *Caribbee Iſlands*, where it climbs upon Buſhes, Hedges, or whatever grows near it, and produces great Quantities of beautiful ſcarlet Flowers, almoſt of the Figure of a ſmall Convolvulus-flower; but the Tube being much longer, and the Seeds being of a different Figure from thoſe of the Convolvulus, Monſieur *Tournefort* hath ſeparated it from that Genus. The Seeds of this Plant are generally brought into *England* every Spring, from the *Weſt-Indies*: they ſhould be ſown on an Hot-bed in *March*; and when the Plants are come up, they muſt be planted each into a ſmall Pot fill'd with light ſandy Earth, and plunged into a freſh Hot-bed, to bring the Plants forward. As the Plants advance in Height, ſo they ſhould be remov'd into larger Pots, and Sticks placed down by them, for them to climb upon. They muſt alſo be removed to a freſh Hot-bed, when the old one has loſt its Heat; and when the Plants are too high to be contain'd under Frames, they ſhould be remov'd into the Stove, where, if they plunged into a moderate Hot-bed of Tanners Bark, and not too much drawn, they will produce a great Quantity of beautiful ſcarlet Flowers, and ripen their Seeds very well; but if they are expoſed to the open

Air, they ſeldom flower in this Country. This Plant continues but one Year, the Root periſhing ſoon after the Seeds are ripe.

QUERCUS, The Oak-tree.

The *Characters* are;

It hath Male Flowers (or Katkins), which conſiſt of a great Number of ſmall ſlender Threads: the Embryoes, which are produc'd at remote Diſtances from theſe, on the ſame Tree, do afterward become Acorns, which are produced in hard ſcaly Cups: to which may be added, The Leaves are ſinuated.

The *Species* are;

1. Quercus *latifolia. Park. Theat.* The common Oak.
2. Quercus *latifolia mas, quæ brevi pediculo eſt. C. B. P.* Oak with the Acorns on ſhort Footſtalks.
3. Quercus *latifolia, foliis ex albo eleganter variegatis.* The ſtriped Oak.
4. Quercus *latifolia perpetuo virens. C. B. P.* The broad-leav'd ever-green Oak.
5. Quercus *calyce echinato, glande majore. C. B. P.* Oak with large Acorns, having prickly Cups.
6. Quercus *humilis, gallis binis, ternis, aut pluribus ſimul junctis. C. B. P.* Dwarf Oak, *vulgo*.
7. Quercus *parva, ſive Phagus Græcorum, & Eſculus Plinii. C. B. P.* The Sweet Oak.
8. Quercus *calyce hiſpido, glande minore. C. B. P.* Oak with ſmall Acorns, having a prickly Cup.
9. Quercus *Burgundiaca, calyce hiſpido. C. B. P.* The *Burgundy* Oak, whoſe Acorns have prickly Cups.
10. Quercus *pedem vix ſuperans. C. B. P.* Dwarf Oak.
11. Quercus *foliis molli lanugine pubeſcentibus. C. B. P.* Oak with ſoft woolly Leaves.
12. Quercus *gallam exiguæ nucis magnitudine ferens. C. B. P.* Oak which bears ſmall Galls not larger than Nuts.
13. Quercus *foliis muricatis, non lanuginoſis, galla ſuperiori ſimili. C. B. P.* Oak with prickly Leaves, which are not woolly, bearing Galls like the former.
14. Quercus *foliis muricatis, minor. C. B. P.* Smaller Oak, with prickly Leaves.
15. Quercus *latifolia, magno fructu, calyce tuberculis obſito. Tourn. Cor.* Broad-leav'd Oak, with large Acorns, whoſe Cups are beſet with Tubercles.
16. Quercus *Orientalis, glande cylindriformi, longo pediculo inſidente. Tourn. Cor.* Eaſtern Oak, with cylindrical Acorns growing on long Footſtalks.
17. Quercus *Orientalis, caſtaneæ folio, glande recondita in cupula craſſa & ſquamoſa. Tourn. Cor.* Eaſtern Oak, with a Cheſtnut-leaf, whoſe Acorns are cloſely ſhut up in a thick ſcaly Cup.
18. Quercus *Orientalis anguſtifolia, glande minori, cupula crinita. Tourn. Cor.* Eaſtern Oak, with a narrow Leaf, and a ſmaller Acorn, whoſe Cup is hairy.
19. Quercus *Orientalis latifolia, glande maxima, cupula crinita. Tourn. Cor.* Eaſtern Oak, with a broad Leaf, and the largeſt Acorn, whoſe Cup is hairy.
20. Quercus *Orientalis latifolia, foliis ad coſtam pulchre inciſis, glande maxima, cupula crinita. Tourn. Cor.* Eaſtern broad-leav'd Oak, whoſe Leaves are finely cut to the Stalks, and a very large Acorn, whoſe Cup is hairy.
21. Quercus *Orientalis, folio ſubrotundo minori, glande magna ſtriata. Tourn. Cor.* Eaſtern Oak, with a ſmaller roundiſh Leaf, and a large ſtriated Acorn.
22. Quercus *Orientalis, folio*

ſubrotundo, leviter inciſo, fructu minori cylindriformi. Tourn. Cor. Eaſtern Oak, with a roundiſh Leaf, ſlightly cut in, and a ſmaller cylindrical Fruit.

23. QUERCUS *Virginiana, rubris venis muricata. Pluk. Phyt.* The *Virginian* ſcarlet Oak.

24. QUERCUS *caſtaneæ foliis, procera arbor Virginiana. Pluk. Phyt. Virginian* Oak, with Cheſnut-leaves.

25. QUERCUS *alba Virginiana. Park. Theat.* The white or iron Oak of *Virginia.*

26. QUERCUS *Virginiana, ſalicis longiore folio, fructu minimo. Pluk. Amalth. Virginian* willow-leav'd Oak.

27. QUERCUS *pumilis, caſtaneæ folio, Virginienſis. Pluk. Almag.* The Chinquepin Oak.

28. QUERCUS *ſempervirens, foliis oblongis non ſinuatis. Baniſt.* Live Oak.

29. QUERCUS *(forte) Marilandica, folio trifido, ad ſaſſafras accedente. Raii Hiſt.* The black Oak of *Maryland.*

30. QUERCUS *folio non ſerrato, in ſummitate triangulo. Cateſb. Hiſt. Nat. Carolin.* The Water Oak.

31. QUERCUS *Carolinienſis, virentibus venis, muricata. Cateſb. Hiſt. Nat. Carolin.* The white Oak of *Carolina.*

32. QUERCUS *humilior, ſalicis folio breviore. Cateſb. Hiſt. Nat. Carolin.* Dwarf *Highland* Willow Oak.

33. QUERCUS *eſculi diviſura, foliis amplioribus aculeatis. Pluk. Phyt.* Red Oak of *Maryland.*

34. QUERCUS *Mariana, oleæ folio, glande parva compreſſo, ad apiculam eleganter radiato. Pluk. Mantiſ.* Swamp *Spaniſh* Oak.

35. QUERCUS *Mariana, muricatis caſtaneæ foliis ſubtus villoſis. Pluk. Mant.* Champion-cheſtnut Oak of *Maryland.*

The two firſt Sorts are common in *England*; but the Sort whoſe Acorns grow on ſhort Footſtalks, is leſs frequent than the other. I have ſeen ſeveral Trees of that Kind near *Dulwich* in *Surry*; but whether the Acorns of this Sort will produce Trees of the ſame Kind, I cannot determine. There are many large Trees of this Kind in *Suſſex*, where the Timber of this Sort is eſteem'd preferable to the firſt Sort; tho', as I have already mention'd, I do not know if it is ſpecifically different from it, having had no Opportunity to raiſe any of theſe Trees from the Acorns. But the late Duke of *Richmond* had ſowed a large Clump with theſe Acorns, a Year before his Death, at his Seat at *Goodwood* in *Suſſex*; where his Grace had ſowed Clumps of all the different Kinds of Oaks which he could procure, not only in *Europe*, but alſo from *America*, and the *Levant*; but theſe Plants are at preſent too ſmall to be diſtinguiſhed by their Leaves, tho', in a few Years, it will not be difficult to determine whether the Acorns will always produce the ſame Kind as the Trees from whence they were taken. The Sort with ſtrip'd Leaves was obtain'd by Accident; but may be propagated by budding or grafting it upon the common Oak. The Leaves of this are generally variegated with White in a moſt beautiful manner; and the Tree is eſteem'd a great Curioſity, by ſuch as delight in variegated Plants.

The fourth Kind deſerves a Place in Wilderneſſes, amongſt other Sorts of ever-green Trees, where it will make a beautiful Appearance; but the Timber is not near ſo good as that of the common Sort, and it is very rare in *England.*

The fifth Kind was originally brought into *England* from *Spain*;

but is alſo found in *France* and *Italy*. This is hardy enough to endure the Cold of our Winters very well, and is preſerv'd by ſuch as are curious in collecting the ſeveral Kinds of Trees.

The eight Sorts which are next mention'd, are Natives of *Europe*; ſome of them grow in the Middle of *France*; others in *Spain*, *Portugal*, *Italy*, and *Germany*. The eleventh Sort grows plentifully about *Aubigny* in *France*, from whence his Grace the late Duke of *Richmond* brought many of the Acorns, which were ſown at *Goodwood* in the Year 1749. Theſe Sorts are full as hardy as the common Oak, ſo may be treated in the ſame manner.

The next eight Sorts were diſcover'd by Dr. *Tournefort* in the *Levant*, and have ſince been obſerv'd by ſome curious Travellers who have gone that Way, ſome of whom have brought their Acorns to *England*; but as theſe are ſubject to periſh when they are kept long out of the Ground, there have not been more than three of theſe Sorts raiſed in *England*, ſo far as I can learn. The Plants of thoſe Sorts which have been raiſed here, ſeem to be full as hardy as our common Oak; for I have expoſed them the firſt Year from Seed, to all the Inclemency of Weather, even in ſmall Pots, which ſtood in the coldeſt Situation of the Garden; yet were not the leaſt injured by the Froſt.

The other Sorts are all of them Natives of the Northern Parts of *America*, where ſome of the Sorts grow to a very large Size; but the Timber of them is not valuable. Others of them are but ſmall of Growth, ſeldom riſing above twenty or thirty Feet high; and many of them naturally grow upon moiſt ſwampy Land, ſo that in *England* they make but little Progreſs; therefore they are not worth the Trouble of cultivating, except one or two Plants of each Sort, for the ſake of Variety. For whatever may have been aſſerted in relation to the Growth of theſe *American* Oaks, or of the Goodneſs of the Timber; yet I hope no Perſons will be ſo weak as to cultivate theſe Trees, in Preference to the native Oak of this Country, which is more valuable than any other Sort yet known. But as the preſent Spirit of introducing all the Sorts of foreign Trees and Shrubs into *England*, prevails with moſt curious Perſons, therefore I have mention'd moſt of the Sorts at preſent known, more to ſatisfy the Curioſity of a few, than for general Uſe.

All the Sorts of Oaks are propagated from Acorns, which ſhould be ſown as ſoon as poſſible after they are ripe; for if they are kept too long out of the Ground, they ſeldom grow.

The Manner of ſowing theſe Acorns (if deſigned for a ſmall Plantation, or to be removed) is, to prepare ſome Beds of freſh Earth, neither too ſtrong and heavy, nor too light and dry; in theſe Beds you ſhould place the Acorns in Rows one Foot aſunder, and about two Inches Diſtance in the Rows, covering them about two Inches thick with the ſame freſh Earth; obſerving to leave none of them uncover'd, to entice the Vermin, which may, in a ſhort time, deſtroy all the Seeds.

In the Spring, when the Plants begin to appear, you muſt carefully clear them from Weeds; and if the Seaſon proves dry, you ſhould refreſh them now-and-then with a little Water, which will greatly promote their Growth. In theſe Beds the Plants ſhould remain until the following Autumn (obſerving conſtantly to keep them clear from Weeds); at which time you ſhould prepare a Spot of good freſh Earth (in Size proportionable to the Quantity of Plants), which ſhould be well trench'd and levell'd: then, toward the Middle or Latter-end of *October*, you ſhould carefully take up the Plants, ſo as not to injure their Roots, and plant them out in Rows three Feet aſunder, and eighteen Inches Diſtance Plant from Plant; obſerving never to ſuffer the Plants to abide long out of the Ground, becauſe their Roots would dry, and endanger the Growth of the Plants.

When they are planted, you ſhould lay a little Mulch upon the Surface of the Ground, near their Roots, to prevent the Earth from drying too faſt; and if the Seaſon ſhould prove very dry, you ſhould give them a little Water, to ſettle the Earth to their Roots.

When the Plants have taken Root in this Nurſery, they will require little more Care than to keep them clear from Weeds, and dig the Ground between the Rows every Spring; in doing of which, you ſhould cut off ſuch Roots as extend very far from the Trunk of the Trees, which will render them better for tranſplanting again: you ſhould alſo prune off ſuch Side-branches as extend themſelves very far, and would retard the upright Shoots: but you ſhould by no means cut off all the ſmall lateral Branches, ſome of which are abſolutely neceſſary to be left on, to detain the Sap for the Augmentation of the Trunk; for I have often obſerv'd, where Trees have been thus cloſely pruned, that their Heads have overgrown their Bodies, ſo that they have bent downward, and become crooked.

When theſe Trees have remain'd in the Nurſery three or four Years, they will then be large enough to tranſplant to the Places where they are to remain; for it is not proper to let them grow very large before they are planted out; becauſe theſe are very hazardous Trees to remove when old, or after they have taken deep Root.

The Seaſon for this Work is (as I ſaid before) in the Autumn; at which time, if they are carefully taken up, there will be little Danger of their ſucceeding. When they are planted, the Surface of the Ground ſhould be mulch'd about their Roots, to prevent its drying too faſt: and if the Seaſon is very dry, they ſhould be water'd, to ſettle the Earth to their Roots, which may be repeated two or three times in very dry Weather: but you muſt carefully avoid giving them too much Water, which is very injurious to theſe Trees, when newly remov'd.

You ſhould alſo ſtake them, to prevent their being ſhaken and diſturbed by the Winds, which would retard their Rooting. In tranſplanting of theſe Trees, you ſhould by no means cut their Heads, which is too much practiſed: all that ſhould be done, muſt be only to cut off any bruiſed or ill-placed Branches, which ſhould be taken off cloſe to the Place where they are produc'd: but there can be no greater Injury done to theſe Trees, than to ſhorten their Shoots; for when the leading Bud (which is abſolutely neceſſary to draw and attract the Nouriſhment) is taken off, the Branch often decays intirely, or at leaſt down to the next vigorous Bud.

The Trees, thus rais'd and manag'd, will (if planted in a proper Soil) grow to a conſiderable Magnitude, and are very proper for a Wilderneſs in large Gardens, or to plant in Clumps in Parks, &c. but if they are deſign'd for Timber, it is by much the better Method to ſow the Acorns in the Places where they are to remain; in order to which, you ſhould provide yourſelf in Autumn with a ſufficient Quantity of Acorns, which ſhould be always taken from ſtrait, upright, vigorous-growing Trees; theſe ſhould be gather'd from under the Trees as ſoon as may be, after they are fallen, and, if poſſible, in a dry Time, laying them thin in ſome open Room to dry; after which they may be put in dry Sand, and preſerv'd in a dry Place until the Beginning of *November*, when you ſhould prepare the Ground for planting them.

The Directions here given are ſolely for ſmall Plantations in a Garden or Park, which are only deſign'd for Pleaſure: but where theſe Trees are cultivated with a View to Profit, the Acorns ſhould be ſown where the Trees are deſign'd to grow; for thoſe which are tranſplanted will never grow to the Size of thoſe which ſtand where they are ſown, nor will they laſt near ſo long ſound. For in ſome Places, where theſe Trees have been tranſplanted with the greateſt Care, and they have grown very faſt for ſeveral Years after, yet they are now decaying, when thoſe which remain in the Place where they came up from the Acorns, are ſtill very thriving, and have not the leaſt Sign of Decay. Therefore, whoever deſigns to cultivate theſe Trees for Timber, ſhould never think of tranſplanting them, but ſow the Acorns on the ſame Ground where they are to grow; for the Timber of all thoſe Trees which are tranſplanted, is not near ſo valuable as that of the Trees from Acorns. I ſhall therefore add ſome plain Directions for the ſowing of Acorns, and managing of the young Trees, during their Minority, until they are out of Danger, and require no farther Care.

The firſt Thing to be done is, that of fencing the Ground very well, to keep out Cattle, Hares, and Rabbets; for if either of theſe can get into the Ground, they will ſoon deſtroy all the young Trees. Indeed they will in a few Years grow to be out of Danger from Hares and Rabbets; but it will be many Years before they will be paſt Injury from Cattle, if they are permitted to get into the Plantation; therefore durable Fences ſhould be put round the Ground: if in the Beginning a Pale-fence is made about the Land, which may be cloſe at the Bottom, and open above, and within the Pale a Quick-hedge planted; this will become a good Fence, by the time the Pale decays, againſt all Sorts of Cattle; and then the Trees will have got above the Reach of Hares and Rabbets, ſo that they cannot injure them; for the Bark of the Trees will be too hard for them to gnaw.

After the Ground is well fenced, it ſhould be prepar'd, by plowing of it three or four times, and after each Plowing, harrow it well, to break the Clods, and cleanſe the Ground from Couch, and the Roots of all bad Weeds. Indeed, if the Ground is Green-ſward, it will be better to have one Crop of Beans, Peas, or Turneps, off the Ground, before the Acorns are ſown, provided theſe Crops are well hoed to ſtir the Surface, and deſtroy the Weeds: for, if this is obſerv'd, the Crop will mend and improve the Land for ſowing; but in this Caſe the Ground ſhould be plow'd as ſoon as poſſible, when the Crop is taken off, to prepare it for the Acorns: which ſhould be ſown as ſoon as may be after the Acorns are ripe: for although theſe may be preſerv'd in Sand for ſome time, yet they will be apt to ſprout; and, if ſo, the Shoots are in Danger of being broken and ſpoil'd: therefore I ſhould adviſe the ſowing early, which is certainly the beſt Method.

In making choice of the Acorns, all thoſe ſhould be preferr'd, which are taken from the largeſt and moſt thriving Trees: and thoſe of Pollard-trees ſhould always be rejected, tho' the latter are generally the moſt productive of Acorns; but thoſe of the large Trees will commonly produce the ſtrongeſt and moſt thriving Plants.

The Seaſon for ſowing of the Acorns being come, and the Ground having been plow'd, and levell'd ſmooth, the next Work is to ſow the Acorns, which muſt be done by drawing of Drills acroſs the Ground, at about four Feet aſunder, and two Inches deep, into which the Acorns ſhould be ſcatter'd, at two Inches Diſtance. Theſe Drills may be drawn either with a Drill-plough, or by Hand with an Hoe; but the former is the moſt expeditious Method, therefore in large Plantations ſhould be preferr'd: in the drawing of the Drills, if the Land has any Slope to one Side, theſe ſhould be made the ſame Way as the Ground ſlopes, that there may be no Stoppage of the Wet by the Drills or Rows of Plants croſſing the Hanging of the Land. This ſhould be particularly obſerv'd in all wet Ground, or where the Wet is ſubject to lie in Winter. When the Acorns are ſown, the Drills ſhould be carefully fill'd in, ſo as to cover the Acorns ſecurely; for if any of them are expoſ'd, they will entice the Birds and Mice; and if either of theſe once attack them, they will make great Havock with them.

The Reaſon of my directing the Drills to be made at this Diſtance, is for the more convenient ſtirring of the Ground between the Rows, to keep the young Plants clean from Weeds: for if this is not carefully done, it cannot be expected, that the young Plants ſhould make much Progreſs; and yet this is generally neglected by many who pretend to be great Planters, who are often at a large Expence to plant, but ſeldom regard them after: ſo that the young Plants have the Difficulty to encounter the Weeds, which frequently are four or five times the Height of the Plants, and not only ſhade and draw them, but alſo exhauſt all the Goodneſs of the Ground, and conſequently ſtarve the Plants. Therefore, whoever hope to have Succeſs in their Plantations, ſhould determine to be at the Expence of keeping them clean for eight or ten Years after ſowing, by which time the Plants will have obtain'd Strength enough to keep down the Weeds: the neglecting of this has occaſion'd ſo many young Plantations to miſcarry, as are frequently to be met with in divers Parts of *England*.

About the End of *March*, or Beginning of *April*, the young Plants will appear above-ground; but, before this, if the Ground ſhould produce many young Weeds, it will be good Huſbandry to ſcuffle the Surface over with *Dutch* Hoes, in a dry time, either the Latter end of *March*, or the Beginning of *April*, to deſtroy the Weeds, whereby the Ground will be kept clean, until all the Plants are come up, ſo as to be plainly diſcern'd; by which time it may be proper to hoe the Ground over again; for by doing it early, while the Weeds are ſmall, a Man will perform more of this Work in one Day than he can in three or four when the Weeds are grown large: beſide, there will be great Hazard of cutting off or injuring the young Plants, when they are hid by the Weeds; and ſmall Weeds, being cut, are ſoon dried up by the Sun; but large Weeds often take freſh Root, and grow again, eſpecially if Rain ſhould fall ſoon after, and then the Weeds will grow the faſter for being ſtirred; therefore it is not only the beſt Method, but alſo the cheapeſt Huſbandry, to begin cleaning early in the Spring, and to repeat it as often as the Weeds are produc'd.

The firſt Summer, while the Plants are young, it will be the beſt Way to perform theſe Hoeings by Hand; but afterward it may be done with the Hoe-plough; for as the Rows are four Feet aſunder, there will be room enough for this Plough to work; and this will ſtir and looſen the Ground, which will be of great Service to the Plants: but there will require a little Hand-labour where the Plough is us'd, in order to deſtroy the Weeds, which will come up in the Rows between the Plants; for theſe will be out of the Reach of the Plough; and if they are not deſtroyed, they will ſoon overgrow and bear down the young Plants.

After the Plants have grown two Years, it will be proper to draw out ſome of them, where they grow too cloſe; but, in the doing of this, great Care ſhould be had not to injure the Roots of thoſe left; for as the Plants which are drawn out are only fit for Plantations deſign'd for Pleaſure, ſo theſe ſhould not be ſo much regarded in their being remov'd, as to ſacrifice any of thoſe which are deſign'd to remain. In the Thinning of theſe Plantations, the Plants may at the firſt time be left about one Foot aſunder, which will give them room enough to grow two or three Years longer: by which time it may be eaſy to judge which are likely to make the beſt Trees. Therefore theſe may be then fix'd on, as Standards to remain: though it will be proper to have a greater Number at this time mark'd than can be permitted to grow, becauſe ſome of them may not anſwer the Expectation: and as it will be improper to thin theſe Trees too much at one time, ſo the leaving double the Number intended at the ſecond Thinning wi'l not be amiſs. Therefore, if they are then left at about four Feet Diſtance in the Rows, they will have room enough to grow three or four Years longer: by which time, if the Plants have made good Progreſs, their Roots will have ſpread over the Ground; therefore it will be proper to take up every other Tree in the Rows. But by this I do not mean to be exact in the Removing, but to make choice of the beſt Plants to ſtand, whichever Rows they may be in, or if they ſhould not be exactly at the Diſtance here aſſign'd: what is intended here, is, to lay down general Rules, which ſhould be as nearly comply'd with as the Plants will permit: therefore every Perſon ſhould be guided by the Growth of the Trees in the Performance of this Work.

When the Plants have been reduc'd to the Diſtance of about eight Feet, they will not require any more Thinning. But in two or three Years time, thoſe which are not to remain will be fit to cut down, to make Stools for Underwood; and thoſe which are to remain, will have made ſuch Progreſs as to become a Shelter to each other; for this is what ſhould be principally attended to whenever the Trees are thinn'd: therefore in all ſuch Places as are much expos'd to the Wind, the Trees ſhould be thinn'd with great Caution, and by ſlow Degrees: for if the Air is let too much at once into the Plantation, it will give a ſudden Check to the Trees, and greatly retard their Growth; but in ſhelter'd Situations, there need not be ſo great Caution us'd as in thoſe Places; as the Plants will not be in ſo much Danger of ſuffering by the Cold.

The Diſtance which I ſhould chooſe to allow to thoſe Trees which are deſign'd to remain for Timber, is, from twenty-five to about thirty Feet, which will not be too near, where the Trees thrive well; in which Caſe their Heads will ſpread, ſo as to meet in about thirty or thirty-five Years: nor will this Diſtance be too great, ſo as to impede the upright Growth of the Trees. This Diſtance is intended, that the Trees ſhould enjoy the whole Benefit of the Soil. Therefore, after one Crop of the Underwood, or, at the moſt, two Crops are cut, I would adviſe the ſtubbing up the Stools, that the Ground may be intirely clear, for the Advantage of the growing Timber, which is what ſhould be principally regarded: but in general moſt People have more Regard for the immediate Profit of the Underwood than the future Good of the Timber; and frequently by ſo doing ſpoil both: for, if the Underwood is left after the Trees have ſpread ſo far as that their Heads meet, the Underwood will not be of much Worth; and yet, by their Stools being left, they will draw away a great Share of Nouriſhment from the Timber-trees, and retard them in their Progreſs.

The Soil in which the Oak makes the greateſt Progreſs, is a deep rich Loam, in which the Trees grow to the largeſt Size; and the Timber of thoſe Trees which grow upon this Land, is generally more pliable than that which grows on a ſhallow or drier Ground; but the Wood of the latter is much more compact and hard. Indeed there are few Soils in *England* in which the Oak will not grow, provided there is proper Care taken in their Cultivation; though this Tree will not thrive equally in all Soils: but yet it might be cultivated to a national Advantage upon many large Waſtes in ſeveral Parts of *England*, as alſo to the great Profit of the Eſtates where theſe Tracts of Land now lie uncultivated, and produce nothing to the Owner. And ſhould the preſent Temper of deſtroying the Timber of *England* continue in Practice ſome Years longer, in the ſame Degree which it has for ſome Years paſt, and as little Care taken to raiſe a Supply, this Country, which has been ſo long eſteem'd for its Naval Strength, may be oblig'd to ſeek for Timber abroad, or be content with ſuch a Naval Strength as the poor Remains of ſome frugal Eſtates may have left growing: for, as to the large Foreſts, from whence the Navy has been ſo long ſupplied, a few Years will put an End to the Timber there: and how can it be otherwiſe, when the Perſons to whoſe Care theſe are committed, reap an Advantage from the Deſtruction of the Timber?

Before I quit this Subject, I muſt beg Leave to take notice of another great Evil, which is of ſo much Conſequence to the Public, as to deſerve their utmoſt Attention; which is that of cutting down the Oaks in the Spring of the Year, at the time when the Sap is flowing. This is done for the ſake of the Bark, which will then eaſily peel off: and, for the ſake of this, I think, there is a Law, whereby People are oblig'd to cut down their Timber at this Seaſon. But by ſo doing the Timber is not half ſo durable as that which is fallen in the Winter: ſo that thoſe Ships which have been built of this Spring-cut Timber, have decay'd more in ſeven or eight Years, than others, which were built with Timber cut in Winter, have done in twenty. And this our Neighbours the *French* have experienced; and therefore have wiſely order'd, that the Bark ſhould be taken off the Trees, ſtanding, at the proper Time; but the Trees are left till the next, and ſometimes until the ſecond Winter, before they are cut down: and the Timber of theſe is found to be more durable, and better for Uſe, than that of any Trees which have not been peel'd. Therefore I wiſh we were wiſe enough to copy after them in thoſe Things which are for public Good, rather than to imitate them in their Follies, which has been too much the Faſhion of late Years.

QUICK: By the Word Quick are generally underſtood all live Hedges, of whatever Sort of Plants they are compos'd, to diſtinguiſh them from dead Hedges: but, in the moſt ſtrict Senſe of this Word, it is applied to the Hawthorn, or *Meſpilus ſylveſtris*; under which Name the young Plants, or Sets, are commonly ſold by the Nurſery-Gardeners, who raiſe them for Sale: for a farther Account of planting theſe for Hedges, ſee *Hedges*; as alſo *Meſpilus*, for the raiſing of the Plants.

QUICK-BEAM. *Vide* Sorbus Sylveſtris.

QUINCE-TREE, *Vide* Cydonia

QUINCUNX ORDER is a Plantation of Trees, diſpoſed originally in a Square, conſiſting of five Trees, one at each Corner, and a fifth in the Middle; which Diſpoſition, repeated again and again, forms a regular Grove, Wood, or Wilderneſs; and when view'd by an Angle of the Square or Parallelogram, preſents equal or parallel Alleys.

QUINQUEFOLIUM, Cinquefoil. *Vide* Potentilla.

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RADISH. *Vide* Raphanus.

RADISH (HORSE). *Vide* Cochlearia.

RAMPIONS. *Vide* Campanula radice eſculenta.

RANDIA.

The *Characters* are;

It hath a Flower conſiſting of one Leaf, whoſe lower Part is tubulous; but the upper Part is expanded, and, for the moſt part divided into five Segments: the Flower is ſucceeded by an oval Fruit, having but one Cell, which is filled with flat cartilaginous Seeds, ſurrounded by a Pulp.

There is but one *Species* of this Plant at preſent known; *viz.*

RANDIA *fruteſcens, ſpinis bijugis, foliis ſubrotundis, floribus albis. Houſt.* Shrubby Randia, with Spines growing two at a Joint, roundiſh Leaves, and white Flowers. This Plant is figured and deſcribed by Sir *Hans Sloane* in his Hiſtory of *Jamaica*, under the Title of *Lycium forte, foliis ſubrotundis integris, ſpinis & foliis ex adverſo ſitis.* Vol. I. p. 40.

This Shrub grows plentifully about *La Vera Cruz*; from whence the Seeds were ſent by the late Dr. *William Houſtoun*, who gave this Name to it, in Honour to Mr. *Iſaac Rand*, a curious Botaniſt.

This Shrub riſes to the Height of ten or twelve Feet in the Country of its Growth, and divides into a great Number of Branches, which are always produced by Pairs oppoſite; as are alſo the Leaves and Spines. The Flowers are ſmall, and of a white Colour, which are ſucceeded by hard oval-ſhaped Fruit, about the Size of a large *Spaniſh* Nut, which is full of flat Seeds, incloſed in a ſoft blackiſh Pulp.

It is propagated by Seeds, which ſhould be ſown early in the Spring, in Pots filled with freſh light Earth, and plung'd into an Hot-bed of Tanners Bark, obſerving to water the Earth frequently, to promote the Vegetation of the Seeds. When the Plants come up, they muſt have freſh Air admitted to them every Day, when the Weather is warm; and they muſt be often refreſhed with Water. In about a Month's time after the Plants come up, they will be fit to tranſplant; when they ſhould be carefully ſhaken out of the Pots, and each planted into a ſeparate ſmall Pot filled with freſh light Earth, and then plunged into the Hot-bed again; where they muſt be ſcreened from the Sun until they have taken new Root; after which time they muſt have Air and Moiſture in proportion to the Warmth of the Seaſon. The Plants may remain in the Hot-bed till toward *Michaelmas*, when the Nights begin to be cold: at which time they ſhould be removed into the Stove: and if they are plunged into the Bark-bed, it will greatly forward their Growth; tho' they will live in the dry Stove, if they are kept in a moderate Temperature of Heat, and are frequently watered. During the two firſt Seaſons, while the Plants are young, it will be proper to keep them conſtantly in the Stove; but then their Leaves muſt be waſhed, whenever they contract Filth; which will bring them forward: but after the Plants have obtained Strength, they may be expoſed every Summer to the open Air, provided they are placed in a warm Situation: but in Winter they muſt be conſtantly placed in a Stove, and kept in a moderate Warmth; otherwiſe they will not live in this Country.

The Leaves of this Plant continue green throughout the Year, which renders the Plant valuable, becauſe it makes an agreeable Variety in the Winter-ſeaſon, when mixed with other tender Plants. Sir *Hans Sloane* found this Plant in the Iſland of *Barbados*.

RANUNCULUS, Crowfoot.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are placed in a circular Order, and expand in form of a Roſe; having, for the moſt part, a many-leav'd Empalement or Flower-cup: out of the Middle of the Flower riſes the Pointal, which afterward becomes a Fruit, either round, cylindrical, or ſpiked; to the Axis *of which, as a* Placenta, *adhere many Seeds, for the moſt part naked.*

The *Species* are;

1. RANUNCULUS *hortenſis erectus, flore pleno. C. B. P.* Common yellow Crowfoot, with a double Flower.

2. RANUNCULUS *repens, flore pleno. J. B.* Common creeping Crowfoot, with a double Flower.

3. RANUNCULUS *montanus, aconiti folio, albus, flore minore. C. B. P.* Mountain Crowfoot, with a white Flower.

4. RANUNCULUS *folio aconiti, flore albo multiplici. C. B. P.* Crowfoot with a Monk's-hood-leaf, and a double white Flower; commonly called the Fair Maid of *France*.

5. RANUNCULUS *bulboſus, flore pleno. C. B. P.* Common bulbous-rooted Crowfoot, with a double Flower.

6. Ranunculus *Conſtantinopolitanus, flore ſanguineo pleno. J. B.* Common Ranunculus, with a double bloody Flower.

7. Ranunculus *aſphodeli radice, prolifer miniatus. C. B. P.* Ranunculus, with an Aſphodel-root, and childing carmine Flowers; commonly called Turk's Turban.

8. Ranunculus *Aſiaticus polycelos, ſive grumoſa radice, ſecundus. J. B. Aſiatic* Ranunculus, with many Heads, and a grumoſe Root; commonly called *Sphæricus.*

9. Ranunculus *aſphodeli radice, flore ſanguineo maximo. H. R. Par.* Aſphodel-rooted Ranunculus, with a very large red Flower; commonly called the Monſter.

10. Ranunculus *aſphodeli radice, flore ſubphœniceo rubente. C. B. P.* Aſphodel-rooted Ranunculus, with purpliſh-red Flowers; commonly called *Marvelia.*

11. Ranunculus *aſphodeli radice, flore luteo variegato. H. R. Par.* Aſphodel-rooted Ranunculus, with a yellow variegated Flower.

12. Ranunculus *Alepus, grumoſa radice, flore lineis rubris & luteis ſtriato. H. R. Par.* Grumoſe-rooted Crowfoot, with a Flower ſtriped with red and yellow Lines; commonly called Ranunculus of *Aleppo.*

13. Ranunculus *aſphodeli radice, flore flavo venis rubris diſtincto; Boſvel dictus. H. R. Par.* Crowfoot with an Aſphodel-root, and yellow Flower with red Veins; commonly called Boſvel.

14. Ranunculus *Alepus, grumoſa radice, flore miniato, per oras luteo. H. R. Par. Aleppo* Crowfoot, with a grumoſe Root, and a carmine Flower, bordered with yellow.

15. Ranunculus *flore pleno flaveſcente, & rubris lineis elegantiſſime variegato. H. R. Par.* Crowfoot with a double yellow Flower, curiouſly ſtriped with red Lines; commonly called *Aurora.*

16. Ranunculus *aſphodeli radice, flore pleno albo parvo, rubris ſtriis diſtincto. H. R. Monſp.* Crowfoot with an Aſphodel-root, and a ſmall double white Flower ſtriped with Red.

17. Ranunculus *aſphodeli radice, flore pleno magno lacteo, ſuperius lituris rubris eleganter picto. Boerh. Ind.* Crowfoot with an Aſphodel-root, and a large double white Flower, mark'd above with red Spots; commonly called the Seraphic.

18. Ranunculus *montanus, folio gramineo. C. B. P.* Graſs-leav'd Mountain Crowfoot.

19. Ranunculus *montanus, folio plantaginis. C. B. P.* Mountain Crowfoot, with a Plantain-leaf.

20. Ranunculus *lanuginoſus anguſtifolius, grumoſa radice, major. C. B. P.* Larger grumoſe-rooted Crowfoot, with narrow downy Leaves.

There are a great Number of Species of this Genus, which grow in *England*; ſome in Meadows, where they over-run the whole Ground, and are the moſt troubleſome Weeds to Paſtures; for as ſome of them are very acrid Plants, the Cattle never eat them; for they would bliſter their Tongues and Throats: therefore when theſe Paſtures are grazed, the Crowfoot is left in Patches all over the Fields untouched. There are other Species of this Genus, which ſpread over the Surface of Standing-waters, and flower early in the Spring; and ſome grow in ſhady Woods: but as theſe are never cultivated in Gardens, I thought it needleſs to enumerate the ſeveral Species here.

The firſt and ſecond Sorts here mentioned are Varieties of two of the wild Kinds: but as theſe produce very double Flowers, they are planted in the Borders of the Flower-garden, where they make a very pretty Variety, and continue long in Flower: the firſt Sort produces upright Stalks, which grow about a Foot high; but the ſecond is a creeping Plant, with reclined Stalks: the latter propagates itſelf very faſt by the trailing Shoots, which put out Roots at every Joint, as they lie upon the Ground. Theſe have both yellow Flowers.

The fifth Sort is alſo a Variety of the common bulbous-rooted Crowfoot, which is common in the Paſtures in moſt Parts of *England*: this produces upright Stalks, which grow eight or ten Inches high; the Flowers are but ſmall, of a pale-yellow Colour, and very double: theſe often produce ſmall Flowers coming out of the Middle of another, ſo as to have ſometimes three Flowers growing above each other, and coming out of the Centre; and is for that by ſome called the Childing Crowfoot.

The third and fourth Sorts are Natives of the *Alps*: the third produces ſmall white ſingle Flowers in *April*, growing in large Bunches: but this is only preſerved in ſome curious Botanic Gardens, for the ſake of Variety; the fourth being much more eſteemed on the account of its very double Flowers, which are of a ſnow-white Colour, and are produced alſo in Cluſters. Theſe Plants delight in Shade; and will thrive much better when they are planted in a loamy Soil, than on a light warm Ground; nor ſhould their Roots be too often tranſplanted: if they are taken up every third Year, and their Roots parted, and planted again immediately, it will be as often as they will require: the beſt time for doing this is in Autumn, about the Beginning of *October*, that they may get Root again before the Froſt comes on; and the Roots ſhould not be divided too ſmall, eſpecially if they are deſigned to flower ſtrong the ſucceeding Spring. If theſe Roots are planted in a Border which is expoſed to the Eaſt, ſo as they may have only the morning Sun, they will thrive much better than in a warmer Expoſure; nor ſhould the Border be much dunged, for they ſeldom thrive well in a rich Soil; therefore in the warm rich Grounds near *London* it is very rarely found to thrive: but in ſome neglected Country Gardens it grows luxuriantly, and produces much ſtronger, and a greater Number of Flowers, than in the Gardens near *London*, where they are cultivated with great Care; this Plant is very ornamental to the Flower-garden, during the Continuance of the Flowers, which is in *May*.

The eighteenth, nineteenth, and twentieth Sorts are alſo preſerved in the Gardens of curious Perſons, for the ſake of Variety. The eighteenth Sort hath long narrow Leaves, which reſemble thoſe of ſome Sort of Graſs; the Flowers are ſingle, and of a yellow Colour, much like thoſe of the common Crowfoot, or Butterflower, which grows in Paſture-grounds; this is a Native of the *Alps*; ſo is a very hardy Plant; and if the Roots are treated in the ſame way, as before directed, and planted to an Eaſt Aſpect, they will thrive very well.

The nineteenth Sort hath broad Leaves, like thoſe of Plantain; the Stalks grow about a Foot high, having ſeveral pretty large ſingle white Flowers on their Tops, growing in Bunches: theſe appear in the Beginning of *April*, at which time they make a pretty Variety in the Borders of the Flower-garden: this is alſo a

Native of the *Alps*, and muſt be treated the ſame way as the former.

The twentieth Sort is ſuppoſed to be a Native of *Auſtria* and *Hungary*; but this is alſo a very hardy Plant: the Roots of this Sort are very like thoſe of the Garden Ranunculus; but are very ſmall: the Leaves are alſo like thoſe of ſome of the Garden-kinds; but are pretty woolly: the Flowers are ſingle, and of a pale-yellow Colour, like ſome of the Field-crowfoots; therefore it is ſeldom preſerved in the Flower-garden: but thoſe who are curious in the Study of Plants, preſerve it for the ſake of Variety. The Roots of this Kind ſhould be planted in a lighter Soil than either of the former; and if they are more expoſed to the Sun, they will thrive the better: but theſe ſhould not be taken out of the Ground oftener than every other Year: and if they are taken up ſoon after their Leaves decay, the Roots may be kept out of the Ground till the Beginning of *October*, and may be treated in the ſame manner as the Garden Ranunculus.

I have been informed, that in ſome Gardens in *France* there are Plants of theſe three Sorts, with very double Flowers; but I have never yet ſeen either of them; ſo would not enumerate them here: tho', if they can be obtained, they will be worthy of our Care, as they muſt be very ornamental Plants, eſpecially the nineteenth Sort with double Flowers; for that with the ſingle Flowers is no deſpicable Plant in the moſt curious Garden of Flowers, as it comes early in the Spring: and the Leaves of the Plant, having a fine gloſſy green Colour, ſet off the ſnowy white Flowers to great Advantage.

The other Sorts were originally brought from *Turky*, and were formerly in great Eſteem in *England*; but of late Years there have been introduced many other beautiful Flowers of a different Kind, from *Perſia*; among which are many with ſemi-double Flowers, which produce Seeds; from which there are ſuch prodigious Varieties of new Flowers annually obtained, which are ſo large, and of ſuch Variety of beautiful Colours, as to exceed all other Flowers of that Seaſon, and even vie with the moſt beautiful Carnations: theſe are, many of them, finely ſcented; and the Roots, when ſtrong, generally produce twenty or thirty Flowers upon each; which, ſucceeding each other, continue in Beauty a full Month or longer, according to the Heat of the Seaſon, or the Care taken to defend them from the Injuries of the Weather: all which excellent Qualities have rendered them ſo valuable, that the old Sorts here named are almoſt diſregarded, except in ſome old Gardens: but however, as they are ſtill preſerv'd by ſome Perſons, I ſhall briefly ſet down their Management, before I proceed to that of the new Kinds, which muſt be treated in a different manner from theſe.

All theſe very double Flowers never produce Seeds; ſo that they are only multiplied by Off-ſets from their Roots, which they generally produce in great Plenty, if planted in a good Soil, and duly attended in Winter. The Seaſon for planting their Roots is any time in *October*; for if they are planted ſooner, they are apt to come up in a ſhort time, and grow pretty rank before Winter, whereby they will be in greater Danger of ſuffering by Froſt; and if they are planted much later, they will be in

Danger of periſhing under-ground; ſo that you ſhould not keep them out of the Ground any longer than the Beginning or Middle of *October*.

As theſe Sorts are pretty hardy, ſo they are generally planted in the common Borders of the Flower-garden, where, if they are properly intermixed with other Flowers of the ſame Growth, they will make a pretty Variety: indeed, ſome Years ago, before we had any of the more valuable Kinds in *England*, theſe were nurſed up with great Care; but ſince the others have been introduced, and of late Years ſo much improved, by ſowing their Seeds, whereby new Flowers have been continually obtained, the old Sorts have been almoſt rejected; ſo that they are rarely to be found in the Gardens of Floriſts: however, ſome of them may be allow'd to have room in the common Borders of the Pleaſure-garden, as they are ſeldom injured by the Froſt; whereas the *Perſian* Kinds are more tender; ſo muſt be planted in Beds, that they may be covered in Winter.

The Beds in which the *Perſian* Ranunculus Roots are planted, ſhould be made with freſh light ſandy Earth, at leaſt three Feet deep: the beſt Soil for them may be compoſed in this manner; *viz.* Take a Quantity of freſh Earth from a rich upland Paſture, about ſix Inches deep, together with the Green-ſward: this ſhould be laid in an Heap to rot for twelve Months before it is mixed, obſerving to turn it over very often, to ſweeten it, and break the Clods: to this you ſhould add a fourth Part of very rotten Neats-dung, and a proportionable Quantity of Sea or Drift-ſand, according as the Earth is lighter or ſtiffer; if it be light, and inclining to a Sand, there ſhould be no Sand added; but if it be an hazel Loam, one Load of Sand will be ſufficient for eight Loads of Earth: but if the Earth is ſtrong and heavy, the Sand ſhould be added in a greater Proportion: this ſhould be mixed ſix or eight Months before it is uſed; and you ſhould often turn it over, in order to unite their Parts well together, before it is put into the Beds.

The Depth which this ſhould be laid in the Beds, muſt be about three Feet: this ſhould be below the Surface, in proportion to the Drineſs or Moiſture of the Place where they are ſituated; which in dry Ground ſhould be two Feet eight Inches below the Surface, and the Beds rais'd four Inches above; but in a moiſt Place they ſhould be two Feet four Inches below, and eight above the Ground; and in this Caſe, it will be very proper to lay ſome Rubbiſh and Stones in the Bottom of each Bed, to drain off the Moiſture; and if, upon this, at the Bottom of the Beds, ſome very rotten Neats dung is laid two or three Inches thick, the Roots will reach this in the Spring, and the Flowers will be the fairer. This Earth I would by no means adviſe to be ſcreen'd very fine; only, in turning it over each time, you ſhould be careful to break the Clods, and throw out all Stones, which will be ſufficient; for if it is made very fine, when the great Rains in Winter come on, it will cauſe the Earth to bind into one ſolid Lump, whereby the Moiſture will be detain'd, and the Roots, not being able to extend their tender Fibres, will rot. Of this I have many Examples, but one particularly to my Coſt: When I had procured a fine Parcel of theſe Roots from Abroad, and being deſirous of having them thrive very well, I took great Pains to ſcreen the Earth of my Beds very fine, which I laid above two Feet deep, and planted a good Part of my Roots therein; but the Seaſon advancing, and having a great deal of other Buſineſs upon my Hands, I did not ſcreen the Earth of all my Beds, but planted ſome of them without doing any thing more than raking them; and the Succeſs was, that the Roots, in thoſe Beds which were ſcreen'd, did, great Part of them, intirely rot; and the remaining Part were ſo weak, as not to produce any good Flowers: whereas thoſe which were planted in the Beds which were not ſcreen'd, did thrive and flower very well, and ſcarce any of the Roots fail'd, tho' the Earth of all the Beds was the ſame, and were in the ſame Situation, both with regard to Wind and Sun; ſo that the Damage which thoſe Roots ſuſtain'd, was owing intirely to the Fineneſs of the Earth; and this I have ſeveral times ſince obſerv'd in other Gardens.

I am aware, that this Depth of three Feet, which I have here directed to make the Beds for theſe Flowers, will be objected to by many Perſons, on account of the Expence and Trouble of preparing them; as alſo ſuppoſing it unneceſſary to make the Beds ſo deep, for Flowers whoſe Roots are ſmall; but if they will give themſelves the Trouble of makeing the Experiment, by preparing one Bed in this manner, and another in the common Way, and plant them both with the ſame Flowers, they will ſoon be convinced of their Error, by the Succeſs of the Flowers. For in the Beds which have been prepared of this Depth, I have ſeen one Root produce upward of fifty Flowers, each of which grew near a Foot high, and were extremely large and fair; whereas, in the common Method of Culture, they are thought to do very well, when they produce eight or ten Flowers on each Root, and thoſe grow ſix Inches high: but if a Perſon will trace the Length of the ſmall Fibres of theſe Roots, he will find them to extend three or four Feet downward. And as it is by theſe diſtant Fibres that the Nouriſhment is taken in, for the Increaſe and Strength of the Flowers; ſo, if theſe meet with a poor barren Soil below, they ſhrink, and the Flowers are ſtarved for want of proper Nouriſhment in the Spring, when it is moſt required.

The Beds, being thus prepar'd, ſhould lie a Fortnight to ſettle, before the Roots are planted, that the Earth may not ſettle unequally, after they are planted; which would prejudice the Roots, by haveing hollow Places in ſome Parts of the Bed, to which the Water would run, and lodge, and ſo rot the Roots in ſuch Places. Then having levell'd the Earth, laying the Surface a little rounding, you ſhould mark out the Rows by a Line, at about ſix Inches Diſtance each Way, ſo that the Roots may be planted every Way in ſtrait Lines; then you ſhould open the Earth with your Fingers, at each Croſs, where the Roots are to be planted, about two Inches deep; placing the Roots exactly in the Middle, with their Crowns upright; then with the Head of a Rake you ſhould draw the Earth upon the Surface of the Bed level, whereby the Top of the Roots will be about an Inch cover'd with Earth, which will be ſufficient at firſt. This Work ſhould be done in dry Weather, becauſe the Earth will then work better than if it were wet; but the ſooner after Planting there happens to be Rain, the better it will be for the Roots; for if it ſhould prove dry Weather long after, and the Earth of the Beds be very dry, the Roots will be ſubject to mould and decay;

therefore in ſuch a Caſe it will be proper to give a little Water to the Beds, if there ſhould no Rain happen in a Fortnight's time, which is very rare at that Seaſon of the Year; ſo that they will ſeldom be in Danger of ſuffering that way.

When the Roots are thus planted, there will no more be required until toward the End of *November*; by which time they will begin to heave the Ground, and their Buds appear; when you ſhould lay a little of the ſame freſh Earth, of which the Beds were compoſed, about half an Inch thick all over the Beds, which will greatly defend the Crown of the Root from Froſt: and when you perceive the Leaves to break thro' this ſecond Covering, if it ſhould prove very hard Froſt, it will be very proper to arch the Beds over with Hoops, and cover them with Mats, eſpecially in the Spring, when the Flower-buds will begin to appear; for if they are expoſed to too much Froſt, or blighting Winds, at that Seaſon, their Flowers ſeldom open fairly, and many times their Roots are deſtroy'd: but this happens more frequently to the *Perſian* Kinds, which are tenderer, than to thoſe Sorts which are pretty hardy; for which Reaſon they are commonly planted in open Borders, intermix'd with other Flowers, as is before-mention'd; though in very hard Winters theſe are apt to ſuffer, where the Froſt is not guarded againſt.

In the Beginning of *March* the Flower-ſtems will begin to riſe; at which time you ſhould carefully clear the Beds from Weeds, and ſtir the Earth with your Fingers between the Roots, being very careful not to injure them; this will not only make the Beds appear handſome, but alſo greatly ſtrengthen their Flowers. When the Flowers are paſt, and the Leaves are wither'd, you ſhould take up the Roots, and carefully clear them from the Earth; then ſpread them upon a Mat to dry, in a ſhady Place; after which they may be put up in Bags or Boxes, in a dry Room, until the *October* following, which is the Seaſon for planting them again.

The *Perſian* Sorts are not only propagated by Off-ſets from the old Roots, as the former, but are alſo multiplied by Seeds, which the ſemi-double Kinds produce in Plenty; therefore whoever is deſirous to have theſe in Perfection, ſhould annually ſow their Seeds, from which new Varieties will be every Year produc'd; but in order hereto, you ſhould be careful in ſaving your Seed, or in procuring it from ſuch Perſons as underſtand how to ſave it; that is, who will be careful not to leave any Flowers for Seeds, but ſuch as have five or ſix Rows of Petals at leaſt, and are well colour'd; for ſince theſe Flowers increaſe plentifully, it is not worth the Trouble to ſow any indifferent Seeds; becauſe there can be but little Hopes of obtaining any good Flowers from ſuch Seeds.

Being prepar'd with Seeds, about the Middle of *Auguſt*, which is the proper Seaſon for ſowing of them, you ſhould get ſome large Pots, flat Seed-pans, or Boxes (of either as many as you have Seeds to ſow). Theſe ſhould be fill'd with light rich Earth, levelling the Surface very even; then ſow the Seeds thereon pretty thick, and cover it about a Quarter of an Inch thick with the ſame light Earth; after which, you ſhould remove theſe Pots into a ſhady Situation, where they may have the morning Sun until Ten of the Clock; and if the Seaſon ſhould prove dry, you muſt often refreſh them with Water; being very careful in doing of this, ſo as not to waſh the Seeds out of the Ground. In this Situation the Pots ſhould remain until the Beginning of *October*, by which time the Plants will begin to come up (though ſometimes the Seeds will remain in the Earth until *November*, before the Plants appear); but then you ſhould remove the Pots into a more open Expoſure, where they may have full Sun; which, at that time, is neceſſary to exhale the Moiſture of the Earth; but toward the Middle of *November*, when you are apprehenſive of Froſt, the Pots ſhould be remov'd under a common Hot-bed-frame; where they may be cover'd with the Glaſſes in the Night-time, and in bad Weather; but in the Day, when the Weather is mild, they ſhould be intirely open'd, otherwiſe the Plants will draw up too weak. The only Danger they are in, is from violent Rains and Froſts; the firſt often rotting the tender Plants, and the Froſt will often turn them out of the Ground; therefore they ſhould be carefully guarded againſt both theſe.

In the Spring, as the Seaſon grows warm, theſe Pots ſhould be expos'd to the open Air; placing them at firſt near the Shelter of an Hedge, to protect them from the cold Winds; but toward the Latter-end of *March*, or the Beginning of *April*, they ſhould be remov'd again into a more ſhady Situation, according to the Warmth of the Seaſon; and if it ſhould prove dry, they muſt be refreſh'd with Water; but you ſhould be careful not to give it to them in great Quantities, which is very apt to rot theſe tender Roots; and in the Middle or Latter-end of *April*, they ſhould be plac'd where they may have only the morning Sun; in which Place they may remain till their Leaves decay; when they may be taken out of the Earth, and the Roots dry'd in a ſhady Place; after which they may be put in Bags, and preſerv'd in a dry Place until the *October* following; when they muſt be planted in the manner before directed for the old Roots.

The Spring following, theſe Roots will flower; at which time you ſhould carefully mark ſuch of them as are worthy to be preſerv'd; and the ſingle or bad-colour'd Flowers may be pull'd up, and thrown away, which is the ſureſt Method of removing them from the good Sorts; for if they are permitted to remain together until their Leaves decay, there may be ſome Off-ſets of the bad Sorts mix'd with the good Flowers. You ſhould not ſuffer thoſe Flowers, which you intend to blow fine the ſucceeding Year, to bear Seeds, but cut off the Flowers when they begin to decay; for thoſe Roots which have produc'd Seeds, ſeldom flower well afterwards; nor will the principal old Root, which has flower'd ſtrong, ever blow ſo fair as will the Off-ſets; which is what ſhould be principally obſerv'd, when a Perſon purchaſes any of theſe Roots; and a great Part of the Complaints made by thoſe who have bought theſe Roots at a dear Rate, is principally owing to this. For the Perſons who ſell them, being appris'd of this Matter, generally part with their old Roots to their Purchaſers, and reſerve the Off-ſets for their own Uſe; which old Roots will often ſo much degenerate from what they were the preceding Year, as to cauſe a Suſpicion, whether the Perſons they were purchas'd from had not changed the Roots; and this Degeneracy always attends theſe Flowers, after having flower'd extremely large and fair, or that they have been permitted to ſeed: ſo that it is abſotely neceſſary to ſow Seeds every Year, in order to preſerve a Succeſſion of good Flowers.

The Manner of preparing the Beds, and the Diſtance and Method of planting the Roots, having been already directed, I ſhall not repeat it here; but will only obſerve, that theſe Flowers, being tender, muſt be protected from hard Froſts, and cutting ſharp Winds, eſpecially after *Chriſtmas*, when their Flower-buds are forming; for if they are neglected at that Seaſon, their Flowers will rarely prove fair; nor ſhould you ſuffer them to receive too much Wet in Winter or Spring, which is equally as injurious to them as Froſt. In planting of theſe Roots you ſhould obſerve to place the ſemi-double Kinds, from which you intend to ſave Seeds, in ſeparate Beds by themſelves, and not intermix them with the double Flowers, becauſe they will require to be treated in a different manner; for when the Flowers of the ſemidouble Kinds begin to fade, you ſhould carefully guard them from Wet; for if they are permitted to receive hard Rains, or are watered at that Seaſon, the Seeds rarely come to Maturity; or are ſo weak, that ſcarce one in fifty of them will grow.

When the Seed begins to ripen (which may be eaſily known, by ſeparating from the Axis, and falling), you ſhould look it over every Day, gathering it as it ripens; for there will be a conſiderable Diſtance in the Seeds of the ſame Bed coming to Maturity, at leaſt a Fortnight, and ſometimes three Weeks, or a Month. When you gather the Seed, it ſhould not be expos'd to the Sun, but ſpread to dry in a ſhady Place; after which, you muſt put it up where the Vermin cannot come to it, until the time of ſowing it.

By this Method of ſowing Seeds every Year, you will not only increaſe your Stock of Roots, but alſo raiſe new Varieties, which may be greatly mended by changing the Seeds into freſh Ground; for if a Perſon continually ſows his Seed in the ſame Garden many Years, they will not produce near ſo fine Flowers, as if he procur'd his Seeds at ſome Diſtance; which is alſo the Caſe with moſt other Plants.

It will alſo be neceſſary to take away all the Earth out of the Beds in which the Roots were blown the preceding Year, and put in new, if you intend to plant Ranunculus's there again; otherwiſe they will not thrive near ſo well, notwithſtanding you may add ſome new Compoſt to the Beds: and this is what all curious Floriſts continually obſerve.

RAPA, Turnep.

The *Characters* are;

The Flower conſiſts of four Leaves, which are placed in form of a Croſs: out of the Flower-cup riſes the Pointal, which afterward turns to a Pod, divided into two Cells by an intermediate Partition, to which the Valves adhere on both Sides, and are full of roundiſh Seeds: to theſe Marks muſt be added, A carneous and tuberoſe Root.

The *Species* are;

1. Rapa *ſativa rotunda, radice candida. C. B. P.* Round Garden-turnep, with a white Root.

2. Rapa *ſativa rotunda, radice ſupra terram viridi. Boerh. Ind.* Round Garden-turnep, whoſe Root is green above ground.

3. Rapa *ſativa rotunda, radice punicea. C. B. P.* Round Garden-turnep, with a purple Root.

4. Rapa *ſativa rotunda, radice obſoleta nigricante. C. B. P.* Round Garden-turnep, with a ruſty-black Root.

5. Rapa *ſativa rotunda, radice foris & intus flaveſcente. C. B. P.* Round Garden-turnep, with a yellow Root both within and without.

6. Rapa *radice oblonga, ſeu fœmina. C. B. P.* Oblong, or female Turnep.

There are ſome other Varieties of this Plant, which differ in the Shape or Colour of their Roots; but as they are only ſeminal Variations, it would be needleſs to enumerate them in this Place, ſince it is the firſt and third Sorts here mention'd, which are chiefly cultivated for the Table in *England.* The yellow Sort, and that with long Roots, were formerly more cultivated than at preſent; for it is now very rare to ſee either of theſe brought to the Markets, though ſome Years ſince they were ſold in as great Plenty as the common round Sort.

Turneps delight in a light ſandy Soil, which muſt not be rich; for in a rich Soil they grow rank, and are ſticky; but if it be moiſt, they will thrive the better, eſpecially in a freſh Land, where they are always ſweeter than upon an old worn-out, or a rich Soil.

The common Seaſon for ſowing of Turneps is any time from the Beginning of *June* to the Middle of *Auguſt*, or a little later; tho' it is not adviſeable to ſow them much after, becauſe, if the Autumn ſhould not prove very mild, they will not have time to apple before Winter. But, notwithſtanding this is the general Seaſon in which the greateſt Part of Turneps are ſown in the Country, yet about *London* they are ſown ſucceſſively from *March* to *Auguſt*, by thoſe who propagate them to ſupply the Markets with their Roots; but there is a great Hazard of loſing thoſe which are ſown early in the Year, if the Seaſon ſhould prove dry, by the Fly, which will devour whole Fields of this Plant while young; ſo that where a ſmall Quantity for the Supply of a Family is wanted, it will be abſolutely neceſſary to water them in dry Weather: and where a Perſon ſows thoſe Seeds in *April* and *May*, it ſhould always be upon a moiſt Soil, otherwiſe they ſeldom come to good, the Heat of the Weather at that Seaſon being too great for them upon a dry Soil: but thoſe which are ſown toward the Middle or Latter-end of *June*, commonly receive ſome refreſhing Showers to bring them forward; without which, it is very common to have them all deſtroy'd.

Theſe Seeds ſhould always be ſown upon an open Spot of Ground; for if they are near Hedges, Walls, Buildings, or Trees, they will draw up, and be very long-topp'd; but their Roots will not grow to any Size.

They are ſown in great Plenty in the Fields near *London*; not only for the Uſe of the Kitchen, but for Food for Cattle in Winter, when other Food fails; and this Way is become a great Improvement to barren ſandy Lands, particularly in *Norfolk*, where, by the Culture of Turneps, many Perſons have doubled the yearly Value of their Ground.

The Land upon which this Seed is ſown, ſhould be plow'd in *April*, twy-fallow'd in *May*, and made very fine; then the Seed ſhould be ſown pretty thin (for it being ſmall, a little will ſow a large Piece of Ground: two Pounds of this Seed is ſufficient for an Acre of Land; but one Pound is the common Allowance). The Seed muſt be harrow'd in, and the Ground roll'd with a wooden Roll, to break the Clods, and make the Surface even. In a Week or ten Days after ſowing, the Plants will come up; at which time, if the Seaſon ſhould prove dry, they will be in great Danger of being deſtroyed by the Fly; but if it ſo happen, the Ground muſt be ſown again; for the Seed being cheap, the chief Expence is the Labour.

When the Plants have got four or five Leaves, they ſhould be hoed to deſtroy the Weeds, and to cut up the Plants where they are too thick; leaving the remaining ones about ſix or eight Inches aſunder each Way, which will be room enough for the Plants to ſtand for the firſt Hoeing: but in the ſecond Hoeing, which muſt be perform'd about three Weeks or a Month after the firſt, they ſhould be cut up, ſo as that the remaining Plants may ſtand fourteen or ſixteen Inches Diſtance, or more, eſpecially if they are deſign'd for feeding of Cattle; for where the Plants are allow'd a good Diſtance, the Roots will be proportionably large; ſo that what is loſt in Number, will be overgain'd by their Bulk; which is what I have often obſerv'd. But in ſuch Places where they are ſown for the Uſe of the Kitchen, they need not be left at a greater Diſtance than ten Inches, or a Foot; becauſe large Roots are not ſo generally eſteem'd for the Table.

It is not many Years ſince the Practice of ſowing Turneps, for feeding of Cattle, has been of general Uſe: how it happen'd that this Improvement ſhould have been ſo long neglected in every Part of *Europe*, is not eaſy to determine; ſince it is very plain, that this Piece of Huſbandry was known to the Antients. For *Columella*, in treating of the ſeveral Kinds of Vegetables which are proper for the Field, recommends the cultivating of the *Rapa* in plenty; becauſe (ſays he) thoſe Roots which are not wanted for the Table, will be eaten by the Cattle. And yet this Plant was not much cultivated in the Fields till of late Years; nor is the true Method of cultivating Turneps yet known, or, at leaſt, not practis'd, in ſome of the diſtant Counties of *England*, at this time. For in many Places the Seed is ſown with Barley, in the Spring; and thoſe Plants which come up, and live till the Barley is cut, produce a little Green for the Sheep to pick up, but never have any Roots. In other Places, where the Turnepſeed is ſown by itſelf, the Method of hoeing them is not underſtood; ſo that Weeds and Turneps are permitted to grow together: and where the Turneps come up thick in Patches, they are never thinned; ſo that they draw up to have long Leaves, but never can have good Roots; which is the principal Part of the Plant; therefore ſhould be chiefly attended to.

The general Method now practiſed in *England*, for cultivating this Plant in the Fields, is the ſame as is practiſed by the Farming-gardeners, who ſupply the *London* Markets with theſe Roots, and is the ſame as before directed. But it is only within the Compaſs of a few Years, that the Country-people have been acquainted with the Method of hoeing them; ſo that the Farmers uſually employ'd Gardeners, who had been bred up in the Kitchen-gardens, to perform this Work. And the uſual Price given *per* Acre, for twice hoeing, and leaving the Crop clear, and the Plants ſet out properly, was ſeven Shillings; at which Price the Gardeners could get ſo much *per* Week, as to make it worth their while to leave their Habitations, and practiſe this in different Counties, during the Seaſon for this Work; which always happens, after the greateſt Hurry of Buſineſs in the Kitchen-gardens is over: ſo that they uſually formed themſelves in ſmall Gangs of ſix or ſeven Perſons, and ſet out on their different Routes; each Gang fixing at a Diſtance from the reſt, and undertaking the Work of as many Farmers in the Neighbourhood, as they could manage in the Seaſon: but as this Work is now perform'd by many Country Labourers, that Practice is loſt to the Kitchen-gardeners, the Labourers doing it much cheaper.

There has alſo been another Method practis'd very lately, by ſome very curious Farmers, in cultivating of Turneps; which is, by ſowing the Seed in Rows, with the Drill-plough. In ſome Places, the Rows are ſown three Feet aſunder, in others four, in ſome five, and ſome ſix. The latter has been recommended by ſome, as the moſt proper Diſtance: and although the Intervals are ſo large, yet the Crop produc'd on an Acre has been much greater, than upon the ſame Quantity of Land where the Rows have been but half this Diſtance; and upon all the Fields which have been drilled, the Crops have greatly exceeded thoſe which have been hand-hoed. The late Lord Viſcount *Townſhend* was at the Expence of making the Trial of theſe two different Methods of Huſbandry, with the greateſt Care, by equally dividing the ſame Fields into different Lands, which were alternately ſown in Drills, and the intermediate Lands in broad Caſt. The latter were hoed by Hand, in the common Method, and the other cultivated by the Hoeing-plough; and when the Roots were fully grown, his Lordſhip had an equal Quantity of Land, which had been ſown in different Methods, meaſured, and the Roots drawn up and weighed; and thoſe Roots which had been cultivated by the Plough, were ſo much larger than the other, that the Crop of one Acre weighed a Ton and an half more than that of an Acre in the other Huſbandry.

But when the Turneps are ſown in Drills, they will require to be hoed by Hand, to ſeparate and cut out the Plants, where they are too near together in the Rows; as alſo to cut up the Weeds between the Plants where the Plough cannot reach them. If this is carefully perform'd, the plowing of the Intervals, which encourage the Growth of the Roots, by thus ſtirring of the Ground, will make it much better prepar'd for the Crop of Barley, or whatever elſe is ſown the following Spring. This Method of Culture may be ſuppos'd to be more expenſive than that commonly practis'd, by thoſe unacquainted with it; but thoſe who have made Trials of both, find the Horſe-plowing to be much the cheapeſt, and by far the beſt. For the Country-people who are employed in Hand-hoeing of Turneps, are very apt to hurry over their Work, ſo that half the Weeds are left growing, and the Plants are ſeldom ſingled out ſo well as they ſhould be; nor are they curious enough to diſtinguiſh the Charlock (which is one of the moſt common Weeds in arable Land) from the Turneps; ſo that about the Middle of *September* it is very common to ſee the Fields of Turneps full of the yellow Flowers of the Charlock. Now, in the Horſe-plowing, all the Weeds in the Intervals will be intirely deſtroyed; ſo that if a few Plants in the Rows of Turneps ſhould be overlook'd, they may be eaſily drawn out when they appear viſible.

The greateſt Evil which attends a

Crop of Turneps, is that of their being deſtroyed by the Fly; which uſually happens ſoon after the Plants come above-ground, or while they are in the Seed-leaf; for after they have put out their rough Leaves pretty ſtrong, they will be paſt this Danger. This is always in dry Weather; ſo that if there happens Rain when the Turneps come up, they will grow ſo faſt, as to be ſoon out of Danger from the Fly. And it has been found, that thoſe which have been ſown in Drills have eſcap'd the Fly much better than thoſe which are ſown in the broad Caſt: but if Soot is ſown along the Surface of each Drill, it will be of great Service to keep off the Fly; and a ſmall Quantity of it will be ſufficient for a large Field, where the Drills only are to be cover'd.

Another Danger of the Crops being deſtroyed, is from the Caterpillers, which very often attack them, when they are grown ſo large as to have ſix or eight Leaves on a Plant. The ſureſt Method of deſtroying theſe Inſects is, to turn a large Parcel of Poultry into the Field; which ſhould be kept hungry, and turn'd early in the Morning into the Field. Theſe Fowls will ſoon devour the Inſects, and clear the Turneps. To this Evil the Turneps which are ſown in Drills are not ſo much expos'd; for as the Ground between the Rows will be kept ſtirred, the Plants will be kept growing; ſo will not be in Danger of ſuffering from theſe Inſects; for the Parent-inſects never depoſit their Eggs upon any Plants which are in Health; but as ſoon as they are ſtinted, they are immediately cover'd with the Eggs of theſe Inſects. And this holds in general with Vegetables as with Animals, which are ſeldom attack'd by Vermine when they are in perfect Health; ſo that it is the Diſeaſe which occaſions the Vermin, and not the Vermin the Diſeaſe, whereas, when they become unhealthy, they are ſoon overſpread as is commonly imagin'd. Now as the Plants will always be in greater Health when the Ground is well ſtirr'd about them, ſo there will be leſs Danger of their ſuffering from theſe Enemies, when they are cultivated by the Horſe-hoe, than in the common way.

When the Turneps are ſown in Drills, it will be the beſt way to hoe between every other Row at firſt, and, ſome time after, to hoe the alternate Intervals; by which Method, the Plants will receive more Benefit from the often ſtirring of the Ground, than they would do, if all the Intervals were hoed at one time; and the Plants will be in leſs Danger of ſuffering from the Earth being thrown up too high on ſome Rows, while others may be left too bare of Earth: but when the Earth has been thrown up on one Side of the Drill, it may be turned down again before the next Interval is hoed. And this alternate moving of the Earth will prepare the Ground very well for the ſucceeding Crop, as well as greatly improve the Turneps. But as this Plough cannot well be drawn nearer to the Drills than two or three Inches, the remaining Ground ſhould be forked to looſen the Parts, and make way for the Fibres of the Roots to ſtrike out into the Intervals; otherwiſe, if the Land is ſtrong, it will become ſo hard in thoſe Places which are not ſtirred, as to ſtint the Growth of the Turneps. And this may be done at a ſmall Expence; a good Hand will perform a great deal of this Work in a Day; and whoever will make Trial, will find their Account in practiſing it; eſpecially on all ſtrong Land, where the Turneps are much more liable to ſuffer from the binding of the Ground, than they will be on a looſe Soil; but yet, in all Sorts of Ground, it will be of great Service to practiſe this.

When the Ground is thus ſtirr'd in every Part, one Plowing will be ſufficient, after the Turneps are eaten, for the ſowing of Barley, or any other Crop; ſo that there will be an Advantage in this, when the Turneps are kept late on the Ground, as will be often the Caſe, eſpecially when they are cultivated for feeding of Ewes, becauſe it is often the Middle of *April* before the Ground will be cleared: for the late Feed in the Spring, before the natural Graſs comes up, is the moſt wanted, where Numbers of Sheep or Ewes are maintain'd; and one Acre of Turneps will afford more Feed, than fifty Acres of the beſt Paſture, at that Seaſon.

In *Norfolk*, and ſome other Counties, they cultivate great Quantities of Turneps for feeding of Black Cattle, which turns to great Advantage to their Farms; for hereby they procure a good Dreſſing for their Land: ſo that they have extraordinary good Crops of Barley upon thoſe Lands, which would not have been worth the plowing, if it had not been thus huſbanded.

When the Turneps are fed off the Ground, the Cattle ſhould not be ſuffer'd to run over too much of the Ground; for if they are not confin'd by Hurdles to as much as is ſufficient for them one Day (and theſe ſhould be every Day remov'd forward), the Cattle will ſpoil three times the Quantity of Turneps they can eat; ſo that it is very bad Huſbandry to give them too much room.

I cannot omit taking notice of a common Miſtake, which has generally prevailed with Perſons who have not been well inform'd to the contrary; which is, in relation to the Mutton which is fatted with Turneps, moſt People believing it to be rank and ill-taſted; whereas it is a known Fact, that the beſt Mutton this Country affords, is all fatted on Turneps; and that rank Mutton, whoſe Fat is yellow, is what the low marſhy Lands of *Lincolnſhire*, and other rank Paſtures, produce.

In order to ſave good Turnep-ſeeds, you ſhould tranſplant ſome of the faireſt Roots in *February*, placeing them at leaſt two Feet aſunder each Way, obſerving to keep the Ground clear from Weeds, until the Turneps have ſpread ſo as to cover the Ground, when they will prevent the Weeds from growing; and when the Pods are formed, you ſhould carefully guard them againſt the Birds, otherwiſe they will devour it, eſpecially when it is near ripe; at which time you ſhould either ſhoot the Birds as they alight upon the Seed, or lay ſome birdlim'd Twigs upon it, whereby ſome of them will be caught; and if they are permitted to remain ſome time, and afterward turn'd looſe, they will prevent the Birds from coming thither again ſome time, as I have experimented. When the Seed is ripe, it ſhould be cut up, and ſpread to dry in the Sun; after which it may be threſh'd out, and preſerved for Uſe.

RAPHANISTRUM, Charlock.

This differs from the Radiſh, in having a jointed Pod, containing one roundiſh Seed in each Joint.

There are ſeveral Varieties of this Plant, two of which grow wild in *England*; the others are Natives of *France*, *Spain*, and *Italy*; but as they are Weeds which grow frequently on arable Land, I ſhall not enumerate the Varieties.

RAPHANUS, Radiſh.

The *Characters* are;

The Flower conſiſts of four Leaves, which are placed in form of a Croſs: out of the Flower-cup riſes the Pointal, which afterward turns to a Pod in form of an Horn, that is thick, ſpongy, and furniſh'd with a double Row of roundiſh Seeds, which are ſeparated by a thin Membrane.

The *Species* are;

1. RAPHANUS *minor oblongus. C. B. P.* Small oblong or common Radiſh.

2. RAPHANUS *niger major rotundus. Mor. Hiſt.* Great round black Radiſh, commonly call'd The *Spaniſh* Radiſh.

3. RAPHANUS *major orbicularis, floribus candidis. C. B. P.* Great round-rooted Radiſh, with white Flowers.

4. RAPHANUS *minor oblongus pyriformis, vulgo Ramurazza. Hort. Cath.* The leſſer Radiſh, with an oblong pear-ſhap'd Root.

5. RAPHANUS *major orbicularis, vel rotundus. C. B. P.* Greater Radiſh, with a round Root, commonly call'd White *Spaniſh* Radiſh.

The firſt Sort here mention'd is that which is commonly cultivated in Kitchen-gardens for its Root; of which there are ſeveral Varieties, as the Small-topp'd, the Deep-red, and the Long-topp'd ſtrip'd Radiſh; all which are Varieties ariſing from Culture. The ſmall-topp'd Sort is moſt commonly preferr'd by the Gardeners near *London*; becauſe they require much leſs room than thoſe with large Tops, and may be left much cloſer together; and as the forward Radiſhes are what produce the greateſt Profit to the Gardener, ſo theſe being commonly ſown upon Borders near Hedges, Walls, or Pales, if they are of the large-topped Sort, they will be apt to grow moſtly at Top, and not ſwell ſo much in the Root as the other, eſpecially if they are left pretty cloſe.

The Seaſons for ſowing this Seed are various, according to the time when they are deſired for Uſe; but the earlieſt Seaſon is commonly toward the Latter-end of *October*, when the Gardeners near *London* ſow them to ſupply the Market; and theſe, if they do not miſcarry, will be fit for Uſe in *March* following, which is full as ſoon as moſt People care to eat them. Theſe (as I ſaid before) are commonly ſown on warm Borders, near Walls, Pales, or Hedges, where they may be defended from the cold Winds.

The ſecond Sowing is commonly about *Chriſtmas*, provided the Seaſon be mild, and the Ground in a fit Condition to work: theſe are ſown near Shelter, but not ſo near Pales and Hedges as the firſt Sowing. Theſe, if they are not deſtroy'd by Froſt, will be fit for Uſe the Beginning of *April*: but in order to have a Succeſſion of theſe Roots for the Table through the Seaſon, you ſhould repeat ſowing of their Seeds once a Fortnight, from the Middle of *January* till the Beginning of *April*; always obſerving to ſow the latter Crops upon a moiſt Soil, and an open Situation; otherwiſe they run up, and grow ſticky, before they are fit for Uſe.

Many of the Gardeners near *London* ſow Carrot-ſeed with their early Radiſhes; ſo that when their Radiſhes are kill'd, the Carrots will remain: for the Seeds of Carrots commonly lie in the Ground five or ſix Weeks before they come up, and the Radiſhes ſeldom lie above a Fortnight under-ground; ſo that theſe are often up, and kill'd, when the Carrot-ſeed remains ſafe in the Ground: but when both Crops ſucceed,

ceed, the Radiſhes muſt be drawn off very young; otherwiſe the Carrots will be drawn up ſo weak, as not to be able to ſupport themſelves when the Radiſhes are gone.

It is alſo a conſtant Practice with theſe Gardeners, to mix Spinach-ſeed with their latter Crop of Radiſhes; ſo that when the Radiſhes are drawn off, and the Ground clean'd between the Spinach, it will grow prodigiouſly, and in a Fortnight's time will as completely cover the Ground, as though there had been no other Crop. And this Spinach, if it be of the broad-leav'd Kind, will be larger and fairer than it commonly is when by itſelf; becauſe where People have no other Crop mix'd with it, they commonly ſow it too thick, whereby it is drawn up weak; but here the Roots ſtand pretty far apart, ſo that after the Radiſhes are gone, they have full room to ſpread; and if the Soil be good, it is a prodigious Size this Spinach will grow to, before it runs up for Seed: but this Huſbandry is chiefly practis'd by ſuch Gardeners as pay very dear for their Land, and are oblig'd to have as many Crops in a Year as poſſible, otherwiſe they could not afford to pay ſuch large Rents.

When the Radiſhes are come up, and have got five or ſix Leaves, they muſt be pull'd up where they are too cloſe; otherwiſe they will draw up to top, but the Roots will not increaſe their Bulk. In doing of this, ſome only draw them out by Hand: but the beſt Method is, to hoe them with a ſmall Hoe, which will ſtir the Ground, and deſtroy the young Weeds, and alſo promote the Growth of the Plants. The Diſtance which theſe ſhould be left, if for drawing up ſmall, may be three Inches; but if they are to ſtand until they are pretty large, ſix Inches are full near enough; and a ſmall Spot of Ground will afford as many Radiſhes at each ſowing, as can be ſpent in a Family while they are good.

If you intend to ſave Seeds of your Radiſhes, you ſhould, at the Beginning of *May*, prepare a Spot of Ground in proportion to the Quantity of Seeds intended (but you ſhould always make Allowance for bad Seaſons; becauſe it often happens, in a very dry Seaſon, that there will not be a fourth Part of the Quantity of Seeds upon the ſame Proportion of Ground as there will be in a moiſt Seaſon). This Ground ſhould be well dug and levell'd; then you ſhould draw up ſome of the ſtraiteſt and beſt-colour'd Radiſhes (throwing away all ſuch as are ſhort, and that branch out in their Roots): theſe ſhould be planted in Rows three Feet Diſtance, and two Feet aſunder in the Rows; obſerving, if the Seaſon be dry, to water them until they have taken Root; after which they will require no farther Care, but only to hoe down the Weeds between them, until they are advanced ſo high, as to ſpread over the Ground, when they will prevent the Growth of Weeds.

When the Seed begins to ripen, you ſhould carefully guard it againſt the Birds, which will otherwiſe deſtroy it. When it is ripe (which you may know by the Pods changing brown), you ſhould cut it, and ſpread it in the Sun to dry; after which you ſhould threſh it out, and lay it up for Uſe, where the Mice cannot come to it, otherwiſe they will eat it up.

The ſmall round-rooted Radiſh is not very common in *England*; but in many Parts of *Italy* it is the only Sort cultivated. The Roots of this Kind are many times as large as a ſmall Turnep, and are very ſweet. This may be propagated in the ſame manner as the common Sort; but only with this Difference; *viz.* That this muſt not be ſown till the Beginning of *March*, and the Plants allow'd a greater Diſtance. The Seeds of this Kind are very ſubject to degenerate when ſav'd in *England*; ſo that it is proper to have them from Abroad every Year.

The other round-rooted Radiſhes are rarely cultivated in *England*; but thoſe who have a mind to have them, may ſow them in the ſame manner as the laſt.

The Black and White *Spaniſh* Radiſhes are commonly cultivated for medicinal Uſe; though there are ſome who are very fond of them for the Table. Theſe are commonly ſown about the Middle of *July*, or a little earlier; and they are fit for the Table by the End of *Auguſt*, or the Beginning of *September*; and they will continue good till the Froſt ſpoils them. Theſe muſt be thinned to a greater Diſtance than the common Sort; for the Roots of theſe grow as large as Turneps; therefore ſhould not be left nearer together than ſix Inches.

Some Perſons who are very curious to have theſe Roots in Winter, draw them out of the Ground before the hard Froſt comes on, and lay them up in dry Sand, in the ſame manner as is practis'd for Carrots; being careful to guard them from Wet and Froſt; and by this Method they preſerve them till the Spring.

RAPISTRUM, Charlock, or Wild Muſtard.

There are two or three *Species* of this Plant, one of which grows wild in *England*; the other two are Weeds in the South of *France*, *Italy*, and *Spain*. Theſe are never preſerv'd, except by Botaniſts for Variety.

RAPUNCULUS, Rampions.

The *Characters* are;

The Flower conſiſts of one Leaf, in its Form approaching to a Bell-ſhape; but is ſo expanded and cut, that it almoſt repreſents the Figure of a Star: the Pointal is commonly ſplit into two horned Diviſions, and the Flower-cup becomes a Fruit, which is divided into three Cells, incloſing many ſmall Seeds.

The *Species* are;

1. Rapunculus *ſpicatus*. *C. B. P.* Spiked Rampion.
2. Rapunculus *ſpicatus albus*. *C. B. P.* Spiked Rampion, with a white Flower.
3. Rapunculus *Alpinus corniculatus*. *C. B. P.* Horned Rampion of the *Alps*.
4. Rapunculus *ſcabioſæ capitulo cæruleo*. *C. B. P.* Rampion with blue ſcabious-like Heads.
5. Rapunculus *ſcabioſæ capitulo albo*. *C. B. P.* Rampion with white ſcabious-like Heads.
6. Rapunculus *ſpicatus, flore flaveſcente*. *Inſt. R. H.* Spiked Rampion, with a yellowiſh Flower.
7. Rapunculus *Creticus, ſeu pyramidalis altera*. *C. B. P.* Pyramidal Rampion of *Crete*.
8. Rapunculus *folio gramineo*. *Inſt. R. H.* Graſs-leav'd Rampion.
9. Rapunculus *Creticus petræmarula, flore albo*. *Tourn. Cor.* Rampion of *Crete*, with a white Flower.
10. Rapunculus *Orientalis, foliis anguſtis dentatis*. *Tourn. Cor.* Eaſtern Rampion, with narrow indented Leaves.
11. Rapunculus *Orientalis anguſtifolius multicaulis totus floridus*. *Tourn. Cor.* Eaſtern narrow-leav'd Rampion, with many Stalks, fill'd with Flowers.

12. Rapunculus *Orientalis, campanulæ pratenſis folio. Tourn. Cor.* Eaſtern Rampion, with a Meadow-bell-flower-leaf.

13. Rapunculus *Orientalis, foliis longioribus, aſperis & rigidis. Tourn. Cor.* Eaſtern Rampion, with longer rough ſtiff Leaves.

14. Rapunculus *Orientalis altiſſimus, foliis glabris & rigidis. Tourn. Cor.* The talleſt Eaſtern Rampion, with ſmooth ſtiff Leaves.

15. Rapunculus *Orientalis, heſperidis folio. Tourn. Cor.* Eaſtern Rampion, with a Dames-violet-leaf.

Theſe are all of them hardy Plants, which will thrive in the open Air. They are propagated by Seed, which ſhould be ſown in Autumn; for if they are kept out of the Ground till the Spring, they frequently fail. Theſe Seeds ſhould be ſown on a Bed of freſh undunged Earth, where they are deſigned to remain; for they do not thrive ſo well when they are tranſplanted. Therefore the beſt Method is, to make ſmall Drills croſs the Bed, about eighteen Inches aſunder, and ſow the Seeds therein: then cover them lightly over with Earth; for if they are buried too deep, they will rot in the Ground. In about a Month after the Seeds are ſown, the Plants will come up, when they ſhould be diligently weeded; which is all the Care they will require till Spring; at which time the Plants ſhould be thinned where they are too cloſe, ſo as to leave them ſix or ſeven Inches apart in the Rows; and afterward they require no farther Attention but to keep them clear from Weeds. In *June* the Plants will flower, and if the Summer prove favourable, they will produce ripe Seeds.

As theſe Plants do not continue above two or three Years, there ſhould be Seeds ſown every other Year, to continue the Sorts; for they are Plants which require little Trouble to cultivate them, and their Flowers make a pretty Variety in large Gardens; therefore they ſhould be allowed a Place amongſt other hardy Flowers.

RAPUNTIUM, Rampions, or Cardinal's Flower.

The *Species* are;

The Flower conſiſts of one Leaf, which is of an anomalous Figure, hollowed like a Pipe, and furrow'd or chanell'd; divided, as it were, into many Parts, in the Shape of a Tongue, defended by a Vagina *or Covering, which enfolds the Pointal: when the Flowers decay, the Flower-cup turns to a Fruit, divided into three Cells full of ſmall Seeds, which adhere to a* Placenta, *which is divided into three Parts.*

The *Species* are;

1. Rapuntium *maximum, coccineo ſpicato flore. Col. in Recb.* Greater Rampions, with a crimſon ſpiked Flower, commonly call'd The ſcarlet Cardinal's Flower.

2. Rapuntium *Americanum, flore dilute cæruleo. H. R. Par.* The blue Cardinal's Flower.

3. Rapuntium *Americanum, virgæ aureæ foliis, parvo flore cæruleo. Tourn.* Cardinal's Flower with Golden-rod-leaves, and a ſmall blue Flower.

4. Rapuntium *Americanum, floribus albis. Inſt. R. H. American* Cardinal Flower, with white Flowers.

5. Rapuntium *Americanum, coccineo flore, lineis albis eleganter picto. Inſt. R. H. American* Cardinal Flower, with a ſcarlet Flower, elegantly ſtriped with White.

6. Rapuntium *Americanum altiſſimum, foliis cirſii, flore vireſcente. Plum. Cat.* The talleſt *American* Car-

dinal Flower, with Leaves like the Melancholy-thiſtle, and greeniſh Flowers.

7. Rapuntium *Americanum, foliis cirſii lucidis, flore multiplici coccineo conglobato. Plum. Cat. American* Cardinal Flower, with ſhining Melancholy-thiſtle-leaves, and many ſcarlet Flowers growing in Cluſters.

8. Rapuntium *Americanum, trachelii folio, flore purpuraſcente. Plum. Cat. American* Cardinal Flower, with a Throatwort-leaf, and a purpliſh Flower.

9. Rapuntium *Americanum, foliis oblongis, floribus parvis cæruleis, ſpica longiſſima. American* Cardinal Flower, with oblong Leaves, and ſmall blue Flowers, growing in a long Spike.

10. Rapuntium *urens Solonienſe. Mor. H. R. Blæſſ.* Burning Cardinal Flower of *Blois*.

11. Rapuntium *urens, flore purpureo-cæruleo. Inſt. R. H.* Burning Cardinal Flower, with a bluiſh-purple Flower.

12. Rapuntium *Africanum minus anguſtifolium, flore violaceo. Inſt. R. H.* Leſſer narrow-leav'd *African* Cardinal Flower, with a violet-colour'd Flower.

13. Rapuntium *Æthiopicum, violaceo galeato flore, foliis pinaſtri. Breyn. Cent. Ethiopian* Cardinal Flower, with a violet galeated Flower, and Leaves like the Pinaſter.

14. Rapuntium *Æthiopicum, cæruleo galeato flore, foliis coronopi. Breyn. Cent. Ethiopian* Cardinal Flower, with a blue galeated Flower, and Leaves like Bucks-horn-plantain.

15. Rapuntium *Æthiopicum, cæruleo galeato flore, foliis dentatis. Breyn. Cent. Ethiopian* Cardinal Flower, with a blue galeated Flower, and indented Leaves.

16. Rapuntium *Canadenſe pumilum, linariæ folio. Sarrac.* Low *Canady* Cardinal Flower, with a Toadflax-leaf.

17. Rapuntium *Creticum minimum, bellidis folio, flore maculato. Tourn. Cor.* The leaſt Cardinal Flower of *Crete*, with a Daiſy-leaf, and a ſpotted Flower.

The firſt Sort is greatly prized by the Curious for the Beauty of its rich crimſon Flowers, which exceed all the Flowers I have yet ſeen, in the Deepneſs of its Colour: and theſe commonly, when their Roots are ſtrong, produce large Spikes of theſe Flowers, which continue a long time in Beauty, and make a moſt magnificent Shew amongſt other Flowers. The time of their Flowering is commonly in *July* and *Auguſt*; and if the Autumn proves very favourable, they will ſometimes produce good Seeds in *England*. Theſe Plants are Natives of *Virginia* and *Carolina*, where they grow by the Sides of Rivulets, and make a moſt beautiful Appearance; from whence the Seeds are often ſent into *England*. Theſe Seeds commonly arrive here in the Spring; at which time they ſhould be ſown in Pots fill'd with light Earth, and but juſt cover'd over; for if the Seeds are buried deep, they will not grow. Theſe Pots ſhould be placed under a Frame, to defend them from Cold, until the Seaſon is a little advanc'd; but they ſhould not be plac'd on an Hot-bed, which will injure the Seeds.

When the Weather is warm, toward the Middle of *April*, theſe Pots ſhould be placed in the open Air, in a Situation where they may have the morning Sun till Twelve of the Clock, obſerving to water them conſtantly in dry Weather; and when the Plants are come up, and are grown pretty ſtrong, they ſhould be tranſplanted each into a ſmall Pot fill'd with freſh light Earth, and placed in the ſame Situation, obſerving to water them in dry Weather; and in Winter they ſhould be placed under an Hot-bed-frame, where they may be ſhelter'd from ſevere Froſts; but in mild Weather they ſhould be as much expoſed to the open Air as poſſible.

The *March* followiug theſe Plants ſhould be put into larger Pots fill'd with the ſame freſh Earth, and plac'd, as before, to the morning Sun; obſerving to water them in dry Weather, which will cauſe them to flower ſtrong the Autumn following.

Theſe Plants are alſo propagated by parting of their Roots: the beſt Seaſon for which is, either ſoon after they are paſt Flower, or in *March*; obſerving to water and manage them, as hath been directed for the ſeedling Plants, both in Winter and Summer.

The blue Sort conſtantly produces ripe Seeds in *England*, which ſhould be ſown ſoon after they are ripe: in the Spring following the Plants will come up, when they ſhould be tranſplanted and manag'd as the other Sort; with which Culture this will alſo agree. This is preſerv'd for Variety; but the Flowers are not near ſo beautiful as thoſe of the former Sort.

The third Sort hath ſmall blue Flowers, and is an annual Plant, periſhing as ſoon as the Seeds are ripe. This may be raiſed in the ſame manner as the former; but is ſcarcely worthy of a Place in the Flower-garden.

The fourth Sort is a Variety of the ſecond, from which it differs only in the Colour of the Flower; and the fifth Sort is a Variety of the firſt; but neither of theſe Variations are laſting: for from the Seeds which I have ſaved from theſe, and ſown, I had ſcarce one Plant which prov'd of the ſame Colours as the Parent-plants.

The ſixth and ſeventh Sorts ſeem to be only Varieties of each other. The ſixth Sort I have propagated ſeveral times, and have had the Plants produce Flowers; but the ſeventh I have not yet ſeen in Flower. Theſe were collected by Mr. *Robert Millar* in *Jamaica*.

The eighth Sort is an annual Plant: if the Seeds of this are permitted to ſcatter in the Pots, and are ſhelter'd in Winter, the Plants will come up in plenty, and require little more Care than to tranſplant them into Pots, and place them in a warm Situation.

The ninth Sort is a biennial Plant, which periſhes ſoon after the Seeds are ripe. This produces very ſmall blue Flowers, growing in long ſlender Spikes; ſo makes but an indifferent Appearance.

The tenth Sort is an hardy Plant, ſo may be ſown in the common Ground; and if the Seaſon proves favourable, the Plants will flower, and perfect their Seeds the ſame Year; and, in a warm Situation, the Plants will live through the Winter. The eleventh is only a Variety of this.

The twelfth, thirteenth, fourteenth, and fifteenth Sorts are annual Plants, which periſh as ſoon as their Seeds are ripe. The Flowers of theſe are ſmall; ſo are not much valued.

The ſixteenth and ſeventeenth Sorts are alſo pretty hardy; but as they have little Beauty, are ſeldom preſerv'd in Gardens.

RAUVOLFIA.

The *Characters* are;

It hath a tubulous Flower conſiſting of one Leaf, whoſe upper-Part ſpreads open into a plain Surface, and is cut into ſeveral Parts; from whoſe Cup ariſes the Pointal, fixed like a Nail, which afterward becomes an almoſt globular ſoft Fruit, full of Milk, in which are contained one or two hard Seeds.

The *Species* are;

1. RAUVOLFIA *tetraphylla anguſtifolia. Plum. Nov. Gen.* Four-leav'd Rauvolfia, with narrow Leaves.

2. RAUVOLFIA *tetraphylla latifolia. Plum. Nov. Gen.* Four-leav'd Rauvolfia, with broad Leaves.

This Name was given to this Genus of Plants by Father *Plumier*, who was the Perſon that diſcover'd them in *America*, in Honour to *Leonard Rawwolf*, who was a curious Botaniſt, and flouriſh'd about the Year 1583. He travell'd into the *Holy Land*, and ſeveral other Places in the Eaſt, and publiſh'd his Travels in *High-Dutch*, which were tranſlated into *Engliſh* under the Inſpection of the great Mr. *Ray*.

Theſe Plants grow plentifully at *Campechy*, from whence I receiv'd their Seeds, which were collected by Mr. *Robert Millar*, Surgeon.

The Seeds of theſe Plants ſhould be ſown in Pots fill'd with freſh Earth, and plung'd into an Hot-bed of Tanners Bark; for as they are very hard, they frequently remain a long time in the Ground: therefore when they are in Pots, they may be ſhifted from one Bed to another, as their Heat decays. When the Plants come up, they muſt be frequently refreſh'd with Water; but it muſt not be given them in large Quantities; for the Plants are ſucculent, and full of a milky Juice; ſo are in Danger of rotting with too much Moiſture. They ſhould alſo have a large Share of freſh Air admitted to them in warm Weather; and when they are about two Inches high, they ſhould be tranſplanted each into a ſeparate ſmall Pot filled with freſh light Earth, and then plunged into the Hot-bed again; obſerving to ſhade them from the Sun, until they have taken new Root; after which time they ſhould have free Air admitted to them every Day, in proportion to the Warmth of the Seaſon. In this Hot-bed the Plants may remain till toward *Michaelmas*, when they ſhould be removed into the Stove, and plunged into the Tanners Bark, where they muſt be kept warm, and not have too much Moiſture in cold Weather, leſt it rot them.

As theſe Plants are Natives of very hot Countries, ſo they will not live in the open Air in *England*; therefore they ſhould conſtantly remain in the Stove; and if they remain in the Bark-bed, they will thrive much faſter, than when they are placed on Stands in a dry Stove. But in the Summer-ſeaſon they ſhould have a large Share of freſh Air admitted to them; and the Leaves of the Plants muſt be now-and-then waſhed with a Sponge, to clear them from the Filth they are apt to contract; which, if ſuffer'd to remain, will retard the Growth of the Plants. Where this Care is taken of them, they will thrive very faſt, and the ſecond Year will produce Flowers, and continue ſo to do for many Years; and will perfect their Seeds in *England*. They may alſo be propagated by Cuttings, which ſhould be laid to dry for two or three Days before they are planted; and then ſhould be plung'd into a moderate Hot-bed of Tanners Bark, obſerving to ſhade them until they have taken Root; after which time they

they may be treated as the ſeedling Plants.

RESEDA, Baſtard-rocket.

The *Characters* are;

It hath a polypetalous anomalous Flower, compoſed of ſeveral diſſimilar Petals, out of whoſe Cup ariſes the Pointal, which afterward becomes a membranaceous Fruit, for the moſt part three or four-cornered, oblong, and, as it were, cylindraceous, pregnant with roundiſh Seeds.

The *Species* are;

1. RESEDA *vulgaris. C. B. P.* Common Baſtard-rocket.

2. RESEDA *criſpa Gallica. Bocc. Rar. Pl.* Curled *French* Baſtard-rocket.

3. RESEDA *latifolia, flore flavo. Mor. Hiſt.* Broad-leav'd Baſtard-rocket, with a yellow Flower.

4. RESEDA *foliis calcitrapæ, flore albo. Mor. H. R. Bleſ.* Baſtard-rocket with Star-thiſtle-leaves, and a white Flower.

5. RESEDA *minor vulgaris. Inſt. R. H.* Smaller common Baſtard-rocket.

6. RESEDA *minor vulgaris, folio minus inciſo. Inſt. R. H.* Smaller common Baſtard-rocket, with a Leaf leſs cut.

7. RESEDA *minor vulgaris, foliis integris. Inſt. R. H.* Small common Baſtard-rocket, with whole Leaves.

8. RESEDA *Pyrenaica, linariæ folio glauco. Schol. Bot. Pyrenean* Baſtard-rocket, with a glaucous Toad-flax-leaf.

9. RESEDA *Ægyptiaca minor, floribus fragrantiſſimis.* The *Mignonette d'Egypt*, or ſmall ſweet-ſcented Reſeda.

Theſe Plants are preſerved in the Gardens of ſome Perſons, who are curious in Botany; but at preſent they are not uſed in Medicine. All of them, but the laſt, are very hardy Plants, which are propagated by Seeds: theſe ſhould be ſown in the Spring, on an open Bed of freſh undunged Earth, in the Place where they are deſign'd to remain; and when the Plants come up, they ſhould be hoed to ſeparate them, where they are too cloſe, as alſo to deſtroy the Weeds. The four firſt Sorts ſhould be allowed eighteen Inches, or two Feet; but the other Sorts, being of leſs Growth, do not require above half that room. The Weeds ſhould be conſtantly hoed down between the Plants when they ariſe, which is all the Culture the Plants require. Some of theſe Plants will flower the ſame Year they are ſown, when they come up early in the Spring; but in general they do not flower till the ſecond Year, when they produce their Seeds, and the Plants commonly periſh ſoon after. If the Seeds of theſe Plants are permitted to ſcatter, the Plants will come up, and ſtock the Ground, ſo as to become Weeds.

The ninth Sort hath been lately introduced into the *Engliſh* Gardens. The Plants of this Sort are generally annual, and periſh ſoon after their Seeds are ripe; though if the Plants are placed in a warm Stove in the Autumn, they may be preſerv'd thro' the Winter, and the Plants will keep conſtantly in Flower.

This Sort ſhould be ſown on a moderate Hot-bed in *March*; and when the Plants are ſtrong enough to tranſplant, they ſhould be pricked out upon another moderate Hot-bed to bring them forward: but the Plants ſhould have a large Share of Air in warm Weather, otherwiſe they will draw up very weak. About the Latter-end of *May* the Plants may be planted out, ſome into Pots, to place near the Apartments; and others into warm Borders, where they may remain to flower and ſeed. For the Plants which grow in the full Ground, often produce more Seeds than thoſe which are in Pots: but at the time when the Seed-veſſels begin to ſwell, the Plants are frequently infeſted with green Caterpillers, which, if they are not deſtroyed, will eat off all the Seed-veſſels.

The Flowers of this Plant have a ſtrong Scent like freſh Raſpberries, which will ſpread over a Room in which two or three Plants are plac'd; and for this are greatly eſteem'd.

RHABARBARUM MONACHORUM. *Vide* Lapathum.

RHAMNOIDES, The Sea Buckthorn.

The *Characters* are;

It hath the whole Appearance of the Buckthorn; but is Male and Female in different Trees: the Flowers of the Male have no Petals: the Flower-cup conſiſts of two Leaves, in the Centre of which are ſeveral ſmall Stamina: *the Female Trees produce roundiſh Berries, each of which contains a ſingle Seed.*

The *Species* are;

1. Rhamnoides *florifera, ſalicis foliis. T. Cor.* Male willow-leav'd Sea Buckthorn.

2. Rhamnoides *fructifera, foliis ſalicis, baccis leviter flaveſcentibus. T. Cor.* Female willow-leav'd Sea Buckthorn, with yellow Berries.

Theſe Plants grow in great Plenty upon the Sea-coaſts of *Lincolnſhire*, and at *Sandwich*, *Deal*, and *Folkſton*, in *Kent*; as alſo in divers Parts of *Scotland.*

They are preſerv'd in ſeveral Gardens near *London* for Variety; where, being intermix'd with other Shrubs of the ſame Growth, they afford an agreeable Proſpect.

Theſe Shrubs are eaſily propagated from Suckers, which they ſend forth in great Plenty from the old Plants. Theſe Suckers may be taken off any time in *February* or *March*, and planted in a Nurſery, where they may be train'd up for two or three Years; after which they may be remov'd to the Places where they are to remain. There is no very great Beauty in theſe Plants; but as their Leaves and Flowers are very different from moſt other Trees, they make a pretty Variety in ſmall Wilderneſs-quarters; or, when planted in Clumps with various Trees, they will grow to be ten or twelve Feet high; but it is very rare to ſee them larger.

RHAMNUS, The Buckthorn.

The *Characters* are;

It hath a funnel-ſhap'd Flower, conſiſting of one Leaf, which is divided toward the Top into four or five Segments: out of the Flower-cup riſes the Pointal, which afterward becomes a ſoft roundiſh Berry, very full of Juice, incloſing four hard Seeds, which are round and ſmooth on the Outſide, but flatted on the other.

The *Species* are;

1. Rhamnus *catharticus. C. B. P.* Common purging Buckthorn.

2. Rhamnus *catharticus minor. C. B. P.* Leſſer purging Buckthorn.

3. Rhamnus *Hiſpanicus, folio buxi, minor. Tourn.* Leſſer *Spaniſh* Buckthorn, with a Box-leaf.

4. Rhamnus *catharticus minor, folio longiori. Inſt. R. H.* Leſſer purging Buckthorn, with a longer Leaf.

5. Rhamnus *tertius, flore herbaceo, baccis nigris. C. B. P. Cluſius*'s third Buckthorn, with an herbaceous Flower, and black Berries.

6. Rhamnus *Hiſpanicus, buxi folio ampliore. Inſt. R. H. Spaniſh* Buckthorn, with a larger Box-leaf.

7. Rhamnus *Hiſpanicus, oleæ folio. Inſt. R. H. Spaniſh* Buckthorn, with an Olive-leaf.

8. Rhamnus *Hiſpanicus, hyperici folio. Inſt. R. H. Spaniſh* Buckthorn, with a St. John's-wort-leaf.

9. Rhamnus *Creticus, amygdali folio minori, Tourn. Cor. Candy* Buckthorn, with a ſmaller Almond-leaf.

10. Rhamnus *Orientalis, alaterni folio. Tourn. Cor.* Eaſtern Buckthorn, with an Alaternus-leaf.

11. Rhamnus *Creticus, buxi folio minori. Tourn. Cor.* Eaſtern Buckthorn, with a ſmaller Box-tree-leaf.

12. Rhamnus *Orientalis, amygdali folio ampliore. Tourn. Cor.* Eaſtern Buckthorn, with a larger Almond-leaf.

The firſt of theſe Trees is very common in the Hedges in divers Parts of *England*; the Berries of which are order'd by the College of Phyſicians for medicinal Uſe; but particularly for making a Syrup, which was formerly in great Uſe; but of late the Perſons who ſupply the Markets, have gather'd ſeveral other Sorts of Berries, which they have either mixed with thoſe of the Buckthorn, or have wholly ſubſtituted them in their place. Theſe are the Berries of the *Frangula, Cornus fœmina*, &c. which Mixture hath ſpoiled the Syrup, and render'd it leſs eſteem'd. But whoever purchaſes the Buckthorn-berries, may diſtinguiſh whether they are right or not, by opening them, and obſerving the Number of Seeds in each; for theſe have commonly four, whereas the *Frangula* has but two, and the *Cornus fœmina* but one; as alſo by bruiſing of the Berries on white Paper, the Juice giving a green Tincture.

The ſecond Sort is leſs common in *England*, and only to be found in Gardens where it is cultivated for Variety. Both theſe Sorts may be propagated by laying down their tender Branches in Autumn; which, if duly water'd in dry Weather the ſucceeding Summer, will take Root in the Compaſs of one Year; and may then be tranſplanted, either where they are to remain, or in ſome Nurſery, to be train'd up for a few Years, and then remov'd to their Places of Growth.

The firſt Sort will grow to the Height of eighteen or twenty Feet; but, being a ſtraggling Grower, is ſeldom much cultivated in Gardens.

The ſecond Sort ſeldom riſes above five Feet high; therefore ſhould be planted amongſt Shrubs of the ſame Growth; where it will add to the Variety, though it has little more Beauty than the former.

They may alſo be propagated by Seeds, which muſt be ſown on a Bed of freſh Earth, ſoon after they are ripe; the Spring following the Plants will appear, when they muſt be carefully clean'd from Weeds; the Autumn following they may be tranſplanted out, and managed as the Layers.

The third Sort is alſo preſerv'd in ſeveral curious Gardens for Variety: this produces vaſt Quantities of purple Flowers moſt Part of the Summer, and many times ripens its Seeds in *England*. This may be propagated by laying down the tender Branches in the Spring, which will take Root by the Spring following, when they ſhould be planted into Pots; and require to be houſed in Winter, though they need only be ſhelter'd from the extreme Froſt; but ſhould have as much free Air as poſſible in mild Weather, and in Summer muſt be often water'd. It delights in a freſh light Soil, and requires to be often remov'd; becauſe the Roots increaſe ſo greatly, as to fill the Pots in a ſhort time.

The fourth, fifth, ſixth, ſeventh, and eighth Sorts grow wild in the Woods in *Spain*, *Portugal*, *Italy*, and the South of *France*; and, for Variety, ſome of the Sorts have been admitted into the *Engliſh* Gardens, though they are Plants of little Beauty. Theſe grow to the Height of ſix or eight Feet, and are hardy enough to live through the Winter in the open Air in *England*.

The ninth, tenth, eleventh, and twelfth Sorts grow in the Iſlands of the *Archipelago*, where Dr. *Tournefort* collected their Seeds, and ſent them to the Royal Garden at *Paris*. Theſe are alſo hardy enough to live in the open Air in *England*, and are all of them Shrubs growing about the ſame Height as the former.

Theſe may all be propagated by laying down their Branches in the ſame manner as hath been before directed for the other Sorts, or from the Seeds: the latter Method is to be preferr'd, where the Seeds can be procured; becauſe thoſe Plants which ariſe from Seeds, will always be ſtronger, and grow erect; whereas thoſe which come from Layers, are very ſubject to ſhoot out lateral Branches, whereby they are retarded in their upright Growth.

RHUS, The Sumach-tree.

The *Characters* are;

The Flowers conſiſt of five Leaves, which are placed in a circular Order, and expand in form of a Roſe; from whoſe Flower-cup riſes the Pointal, which afterward becomes a roundiſh or almoſt kidney-ſhap'd Veſſel, containing one Seed of the ſame Shape: to which Marks may be added, The Flowers growing in Bunches, and the Leaves are either winged, or have three Lobes.

The *Species* are;

1. RHUS *folio ulmi. C. B. P.* Elm-leav'd Sumach.
2. RHUS *Virginianum. C. B. P. Virginian* Sumach, by ſome falſly call'd The Stag's-horn-tree.
3. RHUS *Americanum, panicula ſparſa herbacea, ramis patulis glabris. Hort. Elth. American* Sumach, with looſe herbaceous Panicles, and ſmooth Branches, commonly call'd *New-England* Sumach.
4. RHUS *Canadenſe, folio longiori, utrinque glabro. Inſt. R. H. Canady* Sumach, with a longer Leaf, ſmooth on each Side.
5. RHUS *tenuifolia Virginiana humilis: Rhus anguſtifolium. C. B. P. Pluk. Alm.* Dwarf *Virginian* Sumach, with narrow Leaves.
6. RHUS *Africanum trifoliatum majus, foliis ſubtus argenteis acutis, & margine inciſis. Pluk. Phyt.* Great *African* three-leav'd Sumach, with narrow Leaves cut on their Edges, and white underneath.
7. RHUS *Africanum trifolium minus glabrum, ſplendente folio ſubrotundo integro; forte Lentiſcus Africanus triphyllos quorundam. Pluk. Phyt.* Leſſer three-leav'd *African* Sumach, with a whole roundiſh ſhining ſmooth Leaf.
8. RHUS *Africanum trifoliatum majus, folio ſubrotundo integro, molli & incano. Pluk. Phyt.* Greater three-leav'd *African* Sumach, with a whole roundiſh woolly Leaf.

The firſt Sort grows plentifully in the warm Parts of *Europe*, as alſo in *Turky*, where the Branches are uſed for Tanning of Leather; and altho' this is a Native of *Europe*, yet it is more rare in the *Engliſh* Gardens, than any of the *American* Kinds. This grows to the Height of ſix or eight Feet, and will reſiſt the Cold of the ordinary Winters in *England*;

but in ſevere Froſt the Plants are often deſtroyed.

The Leaves of this Sort are much rounder than thoſe of the *American* Kinds, and each Lobe is ſhaped ſomewhat like the Leaves of Elm; but there are many of theſe *Pinnæ* on each Mid-rib, ſo that it hath as long pennated Leaves as any of the other; wherefore the Title of Elm-leaf is very improperly applied to this Plant: however, as it has been generally known by that Name, I have choſen to continue it.

The ſecond Sort is very common in many Gardens, where it endures the ſevereſt Cold of the Winters in the open Air; and is uſually intermixed, in ſmall Wilderneſs-quarters, amongſt other Trees of the like Growth, where it affords an agreeable Variety. This produces Bunches of ſmall Flowers in *June*, at the Extremities of the Branches, which are ſucceeded by Seeds, which are incloſed in red Covers; ſo that the whole Spikes appear of a fine red Colour. Theſe Bunches are ſometimes uſed in Dyeing; and the Branches of the Trees are uſed for Tanning of Leather in *America*, where theſe Trees grow in plenty.

This Tree will grow to be eight or ten Feet high; but is very ſubject to produce crooked unſightly Branches; ſo that it can't be reduc'd to a regular Stem, which renders it unfit to plant ſingly in an open Situation: but amongſt other Trees, where the Deformity of the Stem is hid, it looks very well. This is by ſome called Stags-horn-tree, from its having ſoft woolly Shoots, reſembling the young Horns of a Stag.

The third Sort has not been many Years introduc'd into the *Engliſh* Gardens; yet is now become more common in the Nurſeries than either of the other. It was brought firſt from *Penſylvania*; but ſince, the Seeds have been brought from *New-England*, and other Northern Parts of *America*. This produces much ſtronger Shoots, and grows more erect, than the others; but as the Spikes of Seeds are of an herbaceous Colour, they do not make ſo good an Appearance as thoſe of the ſecond Sort.

The fourth Sort hath ſmooth long-pointed Leaves, which are of a glaucous Colour; the Spikes of Flowers are of a bright red Colour; ſo that this Sort makes a very beauful Appearance when in Flower; but is of humbler Growth than either of the former. This produces a great Number of Suckers from the Roots, and grows very irregular in its Branches. There is another Variety of this, which differs in the Spikes of Flowers, being cover'd over with a white Powder, as if froſted; but this is not a diſtinct Species.

The fifth Sort is alſo a Shurb of humble Growth, ſeldom riſing more than four Feet high in *England*. This is by ſome call'd the Lentiſcus-leav'd Sumach. The *Pinnæ* of theſe Leaves are join'd by a Border or Wing, which runs along the Mid-rib: the Flowers of this Sort are not very beautiful; but as the Leaves of the Shrub are of a ſingular Structure, they are admitted into the Gardens of the Curious for Variety-ſake. This Sort is hardy enough to endure the Cold of our ordinary Winters very well in the open Air, if it is planted in a ſhelter'd Situation.

All the Sorts may be propagated by Seeds, which ſhould be ſown ſoon after they are ripe; and then the Plants will come up the following Spring: but if the Seeds are not ſown till the Spring, it will be a

Year before the Plants will appear. The beſt Method of raiſing theſe Plants from Seeds is, to ſow them in Pots of light Earth, and place them under an Hot-bed-frame in the Winter, where they may be conſtantly expos'd to the open Air in mild Weather; but ſhould be cover'd in hard Froſt. And if the Pots are plung'd into ſome old Tanners Bark, which has no Heat, this will prevent the Earth from drying, as alſo keep out the Froſt. When the Plants come up, they will require no other Care but to water them in dry Weather; and if, the following Winter, the Pots are plac'd in Shelter, it will ſecure the Plants from being injur'd by Froſt; and in the Spring, before they begin to ſhoot, they ſhould be tranſplanted into Nurſery-beds, where they may grow a Year or two; by which time they will have obtained Strength enough to be planted where they are to remain.

The four firſt-mention'd Sorts propagate themſelves ſo faſt by Suckers, that their Seeds are ſeldom ſown; but the fifth ſeldom produces any Suckers, which occaſions its being ſcarce in the Gardens; for the Seeds do not ripen in *England*.

The *African* Sorts are all preſerv'd in Pots or Tubs, and houſed in Winter, being too tender to endure the Cold of this Climate in the open Air. Theſe may be propagated by laying down their young Branches into freſh Earth; obſerving to water them duly in dry Weather, which will greatly forward their Rooting. In two Years they will be fit to tranſplant; when they may be taken from the old Plants, and each placed in a ſeparate Pot fill'd with freſh light Earth. The beſt time for tranſplanting of theſe Plants is in *April*, obſerving to water and ſhade them until they have taken Root; after which they may be expos'd with Myrtles, Oleanders, and other hardy Exotics, during the Summer-ſeaſon, and in Winter muſt be houſed with them; being equally as hardy, and only require to be ſcreened from ſevere Froſt.

Theſe Plants rarely produce Flowers in *England*; but as they retain their Leaves all the Winter, and may eaſily be reduced to a regular Head, they are preſerved for the Diverſity of their Leaves, which adds to the Variety of a Green-houſe.

RIBES, The Curran-tree.

The *Characters* are;

It hath no Prickles; the Leaves are large; the Flower conſiſts only of five Leaves, which are placed in a circular Order, and expand in form of a Roſe: the Ovary, which ariſes from the Centre of the Flower-cup, becomes a globular Fruit, which is produc'd in Bunches.

The *Species* are;

1. Ribes *vulgaris acidus ruber. J. B.* Common red Curran.

2. Ribes *major, fructu rubro. H. Eyſt.* The large *Dutch* red Curran.

3. Ribes *vulgaris acidus albas baccas ferens. J. B.* Common white Curran.

4. Ribes *quæ groſſularia hortenſis, majore fructu albo. H. R. Par.* Large *Dutch* white Curran.

5. Ribes *major, fructu carneo.* The Champaign Curran, *vulgo*.

6. Ribes *Alpinus dulcis. J. B.* The Gooſberry-leav'd Curran.

7. Ribes *fructu parvo. Merr. Pin.* The ſmall wild Curran.

8. Ribes *nigrum vulgo dictum, folio olente. J. B.* The black Curran.

9. Ribes *vulgaris, foliis ex luteo variegatis.* The yellow ſtrip'd-leav'd Curran.

10. Ribes *vulgaris, foliis ex albo*

eleganter variegatis. The common Curran, with Leaves beautifully variegated with Green and White.

11. Ribes *fructu albo, foliis ex albo variegatis.* The white Curran, with ſtriped Leaves.

12. Ribes *Alpinus dulcis, foliis variegatis.* The ſtriped Gooſberry-leav'd Curran.

13. Ribes *fructu nigro, foliis variegatis.* The black Curran, with ſtriped Leaves.

14. Ribes *Americanus, fructu nigro.* The *American* black Curran.

The five firſt-mention'd Sorts are preſerv'd in all curious Gardens, for the ſake of their Fruits: indeed, of late Years, the common red and white Currans have been neglected, ſince the *Dutch* red and white have become plenty in *England*; theſe producing much larger and fairer Fruit to the Sight than the common Sorts, though I think the common Sorts are much better flavour'd; ſo that they ſhould not be intirely neglected by ſuch as are curious in Fruits.

The ſixth Sort is preſerv'd as a Curioſity, by ſuch as delight in Variety; but the Fruit is not valuable.

The ſeventh Sort is found wild in *England.* The Fruit of this Kind is ſmall, and ill-taſted; which renders it unworthy of being cultivated in Gardens.

The eighth Sort is preſerved in ſome old Gardens; but the Fruit having a diſagreeable ſtrong Taſte, has occaſion'd its being but little cultivated of late Years, unleſs for medicinal Uſe. There is a Rob made of this Fruit, which is in great Requeſt for the Cure of ſore Throats and Quinſies; from whence this Fruit has been called Squinancy-berries.

Thoſe Sorts with variegated Leaves are preſerved by ſuch as are fond of ſtrip'd Plants; but as their greateſt Beauty is only in the Spring, before their Leaves grow large, after which they become more green, they are ſcarcely worth preſerving in a Garden.

The fourteenth Sort was obtain'd by Mr. *Peter Collinſon* from *America,* in whoſe fine Garden it has produc'd Fruit; and from thence hath been communicated to ſeveral other curious Gardens. The manner of this Plant's Flowering is very different from the other Sorts of Currans, for which Variety it may have a Place amongſt other Shrubs; but the Fruit, being ſomewhat like our black Curran, is not much eſteem'd.

All theſe Sorts may be eaſily propagated by planting their Cuttings any time from *September* to *March* (but the Autumn is the beſt), upon a Spot of freſh Earth, which in the Spring muſt be kept very clear from Weeds; and in very dry Weather, if they are water'd, it will greatly promote their Growth. Theſe may remain two Years in this Nurſery; during which time they muſt be pruned up for the Purpoſes deſign'd, *i. e.* either to clear Stems, if for Standards; or if for Walls, Pales, or Eſpaliers, they may be trained up flat.

Then they ſhould be planted out where they are to remain; the beſt Seaſon for which is ſoon after the Leaves begin to decay, that they may take Root before Winter; ſo that they may be in no Danger of ſuffering from Drought in the Spring.

Theſe Plants are generally planted in Rows at about ten Feet aſunder, and four Feet Diſtance in the Rows; but the beſt Method is to train them againſt low Eſpaliers, in which manner they will take up much leſs room in a Garden, and their Fruit will be much fairer.

The Diſtance they ſhould be plac'd for an Eſpalier, ought not to be leſs than ten or twelve Feet, that their Branches may be trained horizontally; which is of great Importance to their Bearing.

Thoſe that are planted againſt Pales or Walls, ſhould alſo be allowed the ſame Diſtance; if they are planted againſt a South eaſt Wall or Pale, it will cauſe their Fruit to ripen at leaſt a Fortnight or three Weeks ſooner than thoſe in the open Air; and thoſe which are planted againſt a North Wall or Pale, will be proportionably later; ſo that by this Method the Fruit may be continued a long time in Perfection, eſpecially if thoſe againſt the North Pales are matted in the Heat of the Day.

Theſe Plants produce their Fruit upon the former Year's Wood, and alſo upon ſmall Snags which come out of the old Wood; ſo that, in pruning them, theſe Snags ſhould be preſerved, and the young Shoots ſhorten'd in proportion to their Strength. The only Method, very neceſſary to be obſerv'd in pruning of them, is, not to lay their Shoots too cloſe, and never to prune their Snags to make them ſmooth: this, with a ſmall Care in obſerving the manner of their Growth, will be ſufficient to inſtruct any Perſon how to manage this Plant, ſo as to produce great Quantities of Fruit.

Theſe Plants will thrive, and produce Fruit, in almoſt any Soil or Situation, and are often planted under the Shade of Trees; but the Fruit is always beſt when they are planted to the open Air, and upon a dry Soil.

RICINOIDES, Phyſic-nut, *vulgo.*

The *Characters* are;

The Male Flowers conſiſt of ſeveral Leaves, which are placed in a circular Order, and expand in form of a Roſe: theſe are barren: and grow at remote Diſtances from the Female Flowers, upon the ſame Plant; in which are produc'd the Embryons, which are wrapt up in the Flower-cup, and afterward become tricapſular Fruits, containing one oblong Seed in each Cell.

The *Species* are;

1. RICINOIDES *Americana, goſſypii folio. Tourn. American* Phyſic-nut, with a Cotton-leaf.

2. RICINOIDES *arbor Americana, folio multifido. Tourn.* Tree *American* Phyſic-nut, with a multifid Leaf, commonly called in the *Weſt-Indies, French* Phyſic-nut.

3. RICINOIDES *Americana, ſtaphyſagriæ folio. Tourn. American* Phyſic-nut, with a Staves-acre-leaf, called in the *Weſt-Indies*, Belly-ach-weed, and wild Caſſada.

4. RICINOIDES *Americana, elæagni folio. Plum. American* Phyſic-nut, with a Wild-olive-leaf.

5. RICINOIDES *fruteſcens, althææ folio. Plum. Cor.* Shrubby Phyſic-nut, with a Marſh-mallow-leaf.

6. RICINIODES *foliis populi hirſutis. Plum. Cat.* Phyſic-nut with hairy Poplar-leaves.

7. RICINOIDES *fruteſcens, linariæ foliis obtuſis. Plum. Cat.* Shrubby Phyſic-nut, with blunt Toad-flax-leaves.

8. RICINOIDES *folio citrii, argenteo polline conſperſo. Plum. Cat.* Phyſic-nut, with a Citron-leaf, powder'd over with Silver.

9. RICINOIDES *verbaſci folio. Plum. Cat.* Phyſic-nut with a Mullein-leaf.

10. RICINOIDES *caſtaneæ folio. Plum. Cat.* Phyſic-nut with a Cheſt-nut-leaf.

11. RICINOIDES *herbaceum, foliis*

triſidis vel quinquefidis & ſerratis. Houſt. Herbaceous Phyſic-nut, with three or five-ſawed Leaves.

12. Ricinoides *folio ſubrotundo ſerrato, fructu parvo conglomerato. Houſt.* Phyſic-nut with a roundiſh ſawed Leaf, and ſmall Fruit, growing in Cluſters.

13. Ricinoides *paluſtre, fructu hiſpido, foliis ſubrotundis, nervoſis & aſperis. Houſt.* Marſh Phyſic-nut, with a prickly Fruit, and roundiſh ribbed Leaves, which are rough.

14. Ricinoides *fruteſcens, lauri folio, calyce ampliſſimo viridi. Houſt.* Shrubby Phyſic-nut, with a Bay-leaf, and a large green Flower-cup.

15. Ricinoides, *ex qua paratur Tourneſol Gallorum. Inſt. R. H. App.* Phyſic-nut, from which the *Tourneſol* of the *French* is made.

Theſe Plants are very common in the warm Parts of *America*. The firſt Sort is planted in Hedges, in moſt Parts of *Jamaica* and *Barbados*; and is propagated by Slips or Cuttings, which will take Root very freely, and make a good Fence in a ſhort time, being very quick of Growth. This riſes to be twenty Feet high, and produces a great Quantity of Nuts, which are given from three to ſeven, for a Vomit; but if the thin Film be taken off, they may be eaten in Quantities without any ill Effect. There is an Oil drawn from theſe Seeds, which is uſed for burning in Lamps.

The ſecond Sort is cultivated in Gardens in *Jamaica* and *Barbados*, for the Beauty of its Flowers, which are of a fine ſcarlet Colour, and produced in large Bunches on divers Parts of the Plant. The Nuts of this Kind are larger than the other, but have much the ſame Quality. This is not a Native in any of the *Engliſh* Settlements in the *Weſt-Indies*; but was brought thither either from the *Spaniſh* or *French* Settlements, from whence it had the Names of *French* and *Spaniſh* Phyſic-nut.

The third Sort is very common in the *Savannas* in *Jamaica* and *Barbados*: the Seed of this Kind is the common Phyſic among the poorer Sort, for the dry Belly-ach.

The fourth Sort grows plentifully upon the Sea-coaſt in divers Parts of the *Weſt-Indies*, and is ſometimes brought into *England* as a Curioſity, where, in ſome very good Gardens, it is preſerved with the former Sorts.

The ſeven next-mention'd Sorts were diſcover'd by Father *Plumier* in *America*: the firſt and ſecond Sorts have been found growing plentifully in the Iſland of *Jamaica*: the third, fifth, ſixth, ſeventh, eighth, ninth, and tenth Sorts were found in plenty about *La Vera Cruz*, by the late Dr. *William Houſtoun*, from whence he ſent their Seeds to *England*: the eleventh Sort was alſo diſcover'd by the ſame Gentleman at *Jamaica*. All theſe Sorts are very tender Plants, being Natives of very warm Countries, and require to be tenderly treated, otherwiſe they will not grow in this Country. The ſecond, ſeventh, eighth, ninth, and tenth Sorts are annual; ſo their Seeds muſt be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be tranſplanted each into a ſeparate ſmall Pot filled with light rich Earth, and then plunged into a moderate Hot-bed of Tanners Bark, obſerving to ſhade them, until they have taken Root; and then they ſhould have freſh Air admitted to them by raiſing the Glaſſes every Day in warm Weather; and they muſt be frequently watered. In about a Month's time, the Plants will have filled theſe Pots with their Roots; when they ſhould be ſhaken out, and put into larger Pots filled with rich Earth, and plunged again into the Hot-bed, provided there is room for the Plants to grow in Height, without being preſſed by the Glaſſes; in which Caſe it will be proper to put them into the Bark-bed in the Stove; for they are too tender to thrive in the open Air in this Country, in the warmeſt Seaſon of the Year. In *July* theſe Plants will flower, and their Seeds will ripen in *Auguſt* and *September*; ſoon after which time the Plants will decay.

The ſeven firſt-mention'd, as alſo the fourteenth Sort, are perennial Plants, which may be preſerved in a warm Stove ſeveral Years; but the firſt is by much the largeſt-growing Plant of all the Sorts. This will grow to the Height of twelve or fourteen Feet; but rarely produces Flowers in *England*. The ſecond Sort grows about eight or nine Feet, and produces its beautiful ſcarlet Flowers every Year; and ſometimes will ripen its Fruit with us.

The third Sort ſeldom riſes more than three Feet high; but divides into many Branches, and frequently produces its Flowers and Seeds in *England*.

The fourth is a ſlender-ſtemm'd Plant, riſing four or five Feet high, having ſilvery Leaves; for which it is chiefly valued. This grows in the *Bahama Iſlands*, and in moſt of the warm Parts of *America*; and is much more nice in its Culture than either of the other Sorts.

The fifth, ſixth, ſeventh, and fourteenth Sorts are ſhrubby Plants, which grow five or ſix Feet high with us; but in their native Countries they are much larger, and branch out on every Side. As theſe Plants produce Flowers of little Beauty, they are ſeldom cultivated but in Botanic Gardens for the ſake of Variety.

Theſe Plants muſt be placed in a Bark-ſtove (with other Plants which are the Produce of the ſame Countries); during which Seaſon they ſhould be often refreſhed with Water, and the Stove ſhould be kept up to *Anana*'s Heat (as mark'd on the Botanical Thermometers); in this they will continue flouriſhing all the Winter, and early the next Spring will produce Flowers, which will be ſucceeded by Fruit.

The eighth, ninth, tenth, eleventh, twelfth, and thirteenth Sorts are annual Plants, which are alſo Natives of the warm Parts of *America*; ſo theſe muſt be ſown on a good Hot-bed in the Spring; and if the Plants are brought forward early, and placed in the Bark-ſtove, they will perfect their Seeds in *England*. But theſe ſhould have a large Share of Air in warm Weather, eſpecially at the time when they are in Flower; for as the Male Flowers grow at remote Diſtances from the Female, on the ſame Plants, there is a Neceſſity for the Admiſſion of Air to aſſiſt the wafting of the *Farina* for the Impregnation of the Seeds, otherwiſe they will be barren; which is often the Occaſion of the Loſs of theſe Species in *Europe*.

The twelfth Sort is an annual Plant, and is found wild in the South of *France*, *Spain*, and *Italy*, from which the Tourneſol is made, that is us'd for colouring Wine and Jellies. This is made of the Juice which is lodg'd between the outer Cover and the Seeds; and, if rubbed on Cloth, at firſt appears of a lively green Colour, but ſoon changeth to a bluiſh-purple Colour: if theſe Cloths are put into Water, and afterwards wrung, they will colour the Water of a Claret-colour. The

Rags, thus dy'd, are brought to *England*, and ſold in the Druggiſts Shops, by the Name of Tourneſol.

This Sort may be propagated by Seeds, which ſhould be ſown in the Autumn, ſoon after they are ripe, on a warm Border of freſh light Earth; and if any of the Plants come up before Winter (which ſometimes happens), they ſhould be ſhelter'd in hard Froſt, otherwiſe they will not live through the Winter. But the Seeds generally remain in the Ground until the Spring, when the Plants will appear; at which time they ſhould be cleaned from Weeds; and where the Plants are too cloſe, they ſhould be thinned, ſo as to leave them about ſix Inches aſunder; and in very dry Weather, if they are now-and-then refreſhed with Water, it will promote their Growth. This is all the Culture they require, except the keeping them conſtantly clear from Weeds; for the Plants do not thrive well, if they are tranſplanted; ſo they ſhould be ſown where they are deſigned to remain. In *July* the Plants will flower, and their Seeds will ripen in *Auguſt* or *September*, and decay ſoon after.

RICINUS, Palma Chriſti, *vulgo*.

The *Characters* are;

The Flowers are apetalous (i. e. *have no Leaves*), *conſiſting of many* Stamina, *which ariſe in the Centre of the Flower-cup: theſe are barren; for the Embryoes are produced at remote Diſtances, upon the ſame Plant; which afterward become triangular Fruits, having three Cells; in each of which is contained one oblong Seed, which has an hard Shell.*

The *Species* are;

1. Ricinus *vulgaris.* C. B. P. The common Palma Chriſti, commonly known in the *Weſt-Indies* by the Name of Oil-nut, or Agnus Caſtus.

2. Ricinus *vulgaris minor.* C. B. P. *Caule rutilante.* The leſſer Palma Chriſti, with rediſh Stalks, commonly call'd in *Barbados*, red Oil-ſeed.

3. Ricinus *vulgaris minor.* C. B. P. *Caule vireſcente.* Leſſer Palma Chriſti, with green Stalks, commonly call'd white Oil-ſeeds in *Barbados.*

4. Ricinus *Americanus major, caule vireſcente.* H. R. P. The greater Palma Chriſti, with green Stalks.

5. Ricinus *Africanus maximus caule geniculato rutilante.* H. R. Par. The greateſt *African* Palma Chriſti, with rediſh jointed Stalks.

6. Ricinus *Indicus, fructu rugoſo non echinato.* *Indian* Oil-ſeed, with a rough Fruit not echinated.

7. Ricinus *Americanus, fructu racemoſo hiſpido.* John. Dend. *American* Oil-ſeed, with prickly Fruit growing in a Cluſter.

8. Ricinus *Americanus, fructu racemoſo glabro majore.* Millar. *American* Oil-ſeed, with larger ſmooth Fruit growing in a Cluſter.

9. Ricinus *Americanus minor, fructu racemoſo glabro.* Millar. Smaller *American* Oil-ſeed, with ſmooth Fruit growing in Cluſters.

10. Ricinus *Zeylanicus, foliis profundius laciniatis.* Inſt. R. H. Oil-ſeed of *Zeylon*, with Leaves deeply cut in.

11. Ricinus *humilis, foliis ſubrotundis ſerratis, & ſubtus argenteis, flore fructuque conglomeratis.* Houſt. Dwarf Oil-ſeed, with roundiſh ſawed Leaves, which are ſilvery underneath, and the Flowers and Fruit growing in Bunches.

The five Sorts firſt-mention'd are very common in divers Parts of *Africa* and *America*; and one of them is alſo found in the warm Parts of *Europe*; but in *England* they are preſerv'd with great Care in ſeveral curious Gardens.

The firſt Sort has been a long time in this Country, but was formerly treated as an annual Plant; whereas, if it be preſerv'd in a good Green-houſe, it will abide two or three Years, and become a large Plant.

The ſecond and third Sorts grow promiſcuouſly all over *America*, where their Seeds are gather'd to draw an Oil from them, for the Uſe of Lamps; theſe Seeds are frequently ſent into *England*, intermixed with each other.

The fourth Sort is alſo very common in *America*, growing promiſcuouſly with the common Sort; the Seeds of both being gather'd indifferently to draw an Oil from them.

The fifth Sort, though mention'd to be a Native of *Africa*, yet is alſo very common in divers Parts of *America*, from whence I have ſeveral times receiv'd the Seeds. This produces very large Leaves and Seeds, and will grow to a large Size, if planted in a rich Soil. I have meaſur'd one of the Leaves of this Plant (which was growing near *Chelſea*), which was upward of two Feet Diameter; and the Stem was as large as a middle ſiz'd Broom-ſtaff, tho' but of one Summer's Growth.

The Seeds of the ſixth Sort were brought from the *Eaſt-Indies*, which came up and flouriſh'd in the Phyſic-garden at *Chelſea*. This Sort grows about the ſame Height as the common Kind; but the Leaves are not ſo deeply divided. The Coverings of the Seeds are not prickly, as in moſt of the other Sorts (ſomewhat reſembling the outer Cover of the Cheſtnut); but are rough, and full of Protuberances.

The Seeds of the ſeventh and eighth Sorts were ſent from *Jamaica* by Mr. *Robert Millar*, who gather'd them on the North Side of that Iſland. Theſe Plants grow, in their native Country, to be eighteen or twenty Feet high, and continue two or three Years. They are nearly alike in their outward Appearance; but differ in the Covering of their Seeds, the ſeventh having prickly Covers, and the eighth being ſmooth.

The ninth Sort is a low Plant, ſeldom riſing above three Feet high, and differs from the common ſmall Sort, in having ſmooth Covers to the Seeds: this is leſs common, and hath not been remarked by any Botanical Writer.

The tenth Sort is a Native of *Ceylon*, from whence the Seeds were brought to *Holland*; and hath been cultivated in many curious Gardens. The Leaves of this Kind are very deeply jagged, in which it chiefly differs from the common Sort.

The eleventh Sort was diſcover'd by the late Dr. *William Houſtoun* at *Campechy*, from whence he ſent the Seeds to *England*. This is a very low Plant, ſeldom riſing above nine Inches or a Foot high, and periſhes ſoon after the Seeds are perfected.

Theſe Plants may be propagated by ſowing their Seeds upon an Hot-bed; and when they are come up, they ſhould be each planted into a ſeparate Pot fill'd with freſh light Earth, and plunged into a freſh Hot-bed, obſerving to water and ſhade them until they have taken Root; after which they muſt have a great Share of free Air, when the Seaſon is mild, otherwiſe they will draw up tall, and be very weak: and as theſe Plants grow very faſt, their Roots will in a ſhort time fill the Pots: therefore they ſhould be ſhifted into larger Pots filed with the like freſh Earth; and toward the Latter-end of *May*, when the Seaſon is warm, they may be harden'd to endure the open Air by degrees; and then, if they are planted out into a very rich Border, and in dry Weather duly water'd, they will grow to a very large Size, particularly the firſt Sort, which I have ſeen upward of ten Feet high in one Seaſon; and theſe Plants have produc'd a great Quantity of Flowers and Seeds; but if you intend to preſerve them through the Winter, they muſt never be placed in the full Ground, becauſe after their Roots have been widely extended, there will be no tranſplanting them with Safety; therefore the beſt way is to ſhift them into larger Pots from time to time, as their Roots ſhall require, placing them in the open Air during the Summer-ſeaſon, in ſome warm Situation, where they may remain till *October*, when they muſt be remov'd into the Houſe with other Exotic Plants, obſerving duly to water them in Winter when they require it, and let them have free Air in mild Weather; for they only require to be protected from Froſt, and cold Winds, ſo that they will endure the Winter in a warm Green-houſe without any Addition of artificial Warmth.

The firſt four Sorts will perfect their Seeds the firſt Seaſon in this Climate, provided they are ſown early in the Spring; but the fifth Sort will rarely produce any till the ſecond Year; ſo that there is a Neceſſity of preſerving this through the Winter, otherwiſe it cannot be maintain'd in *England*.

Theſe Plants deſerve a Place in every curious Garden for the ſingular Beauty of their Leaves (notwithſtanding their Flowers are not very valuable), eſpecially thoſe Sorts which may be propagated every Year from Seeds, becauſe thoſe Perſons who have no Green-houſe to place them into in Winter, may cultivate them as other annual Plants; amongſt which theſe, being placed either in Pots or Borders, afford an agreeable Variety: but it muſt be obſerv'd, as theſe are large-growing Plants, never to place them too near other Plants of leſs Growth, becauſe theſe will overbear and deſtroy them; and thoſe which are planted in Pots, ſhould be allow'd room for their Roots to expand, and muſt be frequently water'd, otherwiſe they will not grow very large.

RICOPHORA, Yams.

The *Characters* of this Genus of Plants are not ſufficiently deſcribed to aſcertain what Claſs it belongs to; nor do theſe Plants produce Flowers in any of the *European* Gardens; ſo that, unleſs the Flowers are examined by a ſkilful Perſon in their native Places of Growth, it will not be known where to place it.

Dr. *Van Royen*, Profeſſor of Botany at *Leyden*, has ranged theſe Plants under the Genus of *Dioſcorea*; but from the imperfect Remains of ſome Flowers brought from *America*, it appeared to me this ſhould not be placed there.

The *Species* are; *bame*

1. RICOPHORA *Indica, ſeu Injous rubra, caule alato ſcammonii, nervoſis conjugatis. Par. Bat. Prod.* The red-ſtalk'd Yam.

2. RICOPHORA *magna Virginiana, bryoniæ nigræ modo volubilis, ſingulari folio nervoſo flexili, caule tetragono, ad angulos elato. Piuk. Almag.* The great *Virginian* Yam, with a ſquare Stalk climbing like Black-bryony, and a ſingle-ribb'd Leaf.

There are ſome other Varieties of this Plant in the warm Parts of the *Eaſt* and *Weſt-Indies*; but theſe two are the moſt commonly cultivated for Uſe. Theſe Plants are wild in the Woods in *Zeylon*, and are reckoned as good as thoſe which are cultivated; but as they are difficult to dig up, and grow ſcattering at a great Diſtance from each other, ſo the Inhabitants of that Iſland plant them in open Fields for Food. Theſe are alſo cultivated by the Inhabitants of *Jamaica*, and the other Iſlands in *America*; and are eſteemed a very wholſome Food. The manner of propagating them is the ſame as for Potatoes; which is, to divide the Roots into ſeveral Pieces, preſerving a Bud or Eye to each, and planting them in Drills, at about a Foot and an half Diſtance in the Rows, and three Feet aſunder Row from Row. Theſe Drills ſhould be made a Foot deep; and, after the Pieces of Roots are laid therein, muſt be covered over with the Earth which came out of the Drills. After this they require no farther Care but to keep the Ground clear from Weeds, until the Shoots are grown ſtrong, when they will over-top the Weeds, and prevent their growing. In about ten Months after the planting, the Roots will be fully grown for Uſe; when they will, ſome of them, weigh five or ſix Pounds *per* Root or more: when they are taken out of the Ground, they muſt be laid up in dry Sand to preſerve them for Uſe; but the Sand muſt be kept very dry, otherwiſe the Roots will grow, and oftentimes they will rot with much Moiſture. With theſe Roots the Planters feed their Negroes inſtead of Bread; and they grind the Roots to a Powder, and make Puddens of it, in the ſame manner as Wheat-flour is uſed in *England*: but the Roots muſt be well ſoaked in Water before they are uſed, to draw out the ſharp biting Taſte, which they have when taken out of the Ground.

Theſe Plants are preſerved in ſome curious Gardens in *Europe* for Variety; but as there is little Beauty in them, they are hardly worthy of a Place; for they muſt be kept in a warm Stove, and plunged into the Tanners Bark, otherwiſe they will not thrive in this Country. The Shoots of theſe Plants will riſe to the Height of ten or twelve Feet, and twine about the Plants which are near them; ſo that where theſe are preſerved, they ſhould be placed near a Trelace on the Back-ſide of the Bark-bed; and as the Shoots are produced, they ſhould be trained up to the Poles of the Trelace to ſupport them, that they may not ramble over the Plants, and deſtroy them. The Shoots of theſe die to the Root in Winter; after which time they ſhould not have much Water given to them, leſt it ſhould rot them; but, during the Summer-ſeaſon, they muſt be plentifully watered in hot Weather. Theſe Roots muſt be taken up in *March*, before they begin to ſhoot, and new-potted; and at the ſame time, it will be proper to cut off the old decayed Parts of the Roots, preſerving only the ſound, and ſuch as have good Buds or Eyes for planting: for if the whole Roots are planted, as they were taken out of the Ground, they are very ſubject to rot; ſo that it is much better to cut the Roots into ſeveral Parts, and let theſe lie a few Days to heal their Wounds, before they are planted. Theſe ſhould be plunged into an Hot-bed, and muſt have very little Moiſture until they ſhoot; but afterward will require it more plentifully.

RIVINIA.

The *Characters* are;

The Flower is apetalous: the Empalement conſiſts of four Leaves, which are placed circularly, and expand in form of a Roſe: the Pointal *is ſituated in the Centre, attended by ſix* Stamina, *which are extended beyond the Empalement: the Pointal afterward becomes a ſoft roundiſh Berry, full of Juice, in which is included a ſingle Seed.*

The Title of this Genus was given to it by Father *Plumier*, who diſcover'd the Plants in *America*, in Honour to *Auguſtus Quirinus Rivinus*, a famous Botaniſt of *Leipſic*, who publiſh'd two Volumes of Plants in Folio, in which the Figures of the Plants are engraven on Copper-plates. Theſe were publiſh'd in 1690.

Dr. *Linnæus* has applied the Title of this Genus to the Solanoides of *Tournefort*, which is by Dr. *Boerhaave* join'd to the Phytolacca; ſo has been of late Years chiefly known by the Name of *Phytolacca fructu minori*: but this is totally different from *Plumier*'s Plants; and the Doctor has charg'd Father *Plumier* with an Error in the engraving of the Characters of this Genus with ſix *Stamina*, inſtead of four: whereas *Plumier*'s Plants have ſix *Stamina*; but the Plant which the Doctor has applied to this Title has but four. Therefore the Miſtake is the Doctor's, and not Father *Plumier*'s.

The *Species* are;

1. Rivinia *humilis racemoſa, baccis puniceis. Plum. Nov. Gen.* Dwarf branching Rivinia, with ſcarlet Berries, ſometimes call'd Curran tree

2. Rivinia *ſcandens racemoſa, amplis ſolani foliis, baccis violaceis. Plum. Nov. Gen.* Climbing branching Rivinia, with ample Night-ſhade-leaves, and Violet-berries.

The firſt Sort grows about four or five Feet high, having very woody Stems and Branches; the Leaves are ſhaped ſomewhat like thoſe of the Pear-tree, but are more pointed: the Flowers are produc'd in a long Bunch, like thoſe of the Curran-tree, toward the End of the Branches. Theſe are ſucceeded by Berries about the Size of Currans, of a ſcarlet Colour.

The other Sort hath climbing woody Branches, which twiſt themſelves about thoſe Trees which grow near it; and riſes to the Height of twenty Feet; the Leaves of this Sort are much larger than thoſe of the other; the Flowers grow in cloſer Cluſters; and the Berries are of a Violet-colour when ripe. This Sort was found growing in *Jamaica*, by the late Dr. *William Houſtoun*, who alſo found the firſt Sort at the *Havannah*.

Both theſe Plants are tender; ſo cannot be preſerved through the Winter in *England*, unleſs they are placed in a warm Stove. They may be propagated by Seeds; but theſe commonly remain a whole Year in the Ground: ſo that they ſhould be ſown in Pots, which may be plung'd into the Tan-bed, where they muſt be kept warm in Winter, and in the following Spring ſhould be plung'd into a freſh Hot-bed of Tan, to bring up the Plants: and when they are fit to remove, they ſhould be each planted into a ſeparate ſmall Pot fill'd with freſh light Earth, and plung'd into the Tan-bed; and then the Plants ſhould be treated in the ſame manner as hath been directed for other tender Plants from the ſame Countries.

I received the Berries of the firſt Sort from *Antigua*, by the Name of Currans.

ROBINIA, Falſe Acacia.

The *Characters* are;

The Empalement of the Flower is of one Leaf, and divided into four Parts, the three Under-ſegments being narrow, but the upper one is broad: the Flower is of the pea-bloom Kind:

Kind: the Standard is large, roundiſh, and ſpreads open: the two Wings are oval and obtuſe: the Keel is roundiſh, compreſs'd, obtuſe, and is extended the Length of the Wings: in the Centre of the Keel is ſituated the Pointal, attended by ten Stamina, *nine of them being joined together, and the other ſtanding ſingle: theſe are incloſed by the Keel: the Pointal afterward becomes an oblong compreſs'd Pod, incloſing kidney-ſhap'd Seeds.*

The *Species* are;

1. ROBINIA *pedunculis racemoſis, foliis pinnatis. Hort. Upſal.* Common *Virginia* Acacia, with ſmooth Pods.

2. ROBINIA *foliis pinnatis, leguminibus echinatis. Virginia* Acacia, with ſhort prickly Pods.

3. ROBINIA *pedunculis ſimpliciſſimis, foliis pinnatis. Hort. Upſal.* The Caragana.

4. ROBINIA *pedunculis ſimpliciſſimis, foliis quaternatis petiolatis. Hort. Upſal.* Falſe Acacia, with a ſingle Footſtalk, having four Lobes.

5. ROBINIA *pedunculis ſimpliciſſimis, pinnis ſubrotundis, leguminibus alatis.* Falſe Acacia, with ſingle Footſtalks, round Lobes, and wing'd Pods; commonly call'd Dog-wood in the *Weſt Indies.*

The firſt Sort has been long an Inhabitant of many *Engliſh* Gardens, where it was commonly known by the ſimple Title of Acacia: but as this is of a very different Genus from the true Acacia, Dr. *Tournefort* has given the Tile of Pſeudoacacia to this Genus of Plants: but Dr. *Linnæus* has rejected this Name, as it is a Compound; and has call'd it *Robinia,* in Honour to Monſieur *Robine,* who introduced this Tree into the Gardens of *France* from *North-America.*

The ſecond Sort is leſs common than the firſt. There was a large Tree of this kind, ſome Years ago, growing in the Biſhop of *London's* Garden at *Fulham,* which produced plenty of Seeds. The Pods of this Sort are much ſhorter, and cloſely beſet with ſhort Prickles; but in other reſpects it agrees with the firſt Sort. There is alſo another Variety of this Tree, which has roſe-colour'd Flowers; but this is not common in *England,* nor do I believe it is plenty in *America*; though I have been inform'd, that in ſome of the Woods in *New-England,* they are in as great Plenty as the common Sort; which if true, in time this Sort may become common in *England.*

The third Sort is a Native of *Siberia,* from whence the Seeds have been brought, and diſtributed to many Gardens in *England* and *Holland.* This Sort grows to the Height of twenty or thirty Feet in its native Country, and produces long Cluſters of ſweet yellow Flowers: but in *England* there are few of theſe Plants which thrive well; for they generally begin to ſhoot with the firſt warm Weather in *February*; and if Froſt happens after (which is generally the Caſe in this Country), the Shoots are kill'd; and this ſtints the Plants ſo much, as that they do not recover it the following Summer. This is propagated by Seeds, which ſhould be ſown on a Bed of light Earth, in the Spring of the Year, covering them about half an Inch deep with the ſame light Earth. The Plants will come up in about five or ſix Weeks, and will require no other Care but to keep them clean from Weeds; and in the Autumn they muſt be tranſplanted where they are deſign'd to remain, becauſe they do not bear tranſplanting well. Theſe Plants ſhould have a cool Situation, and a moiſt Soil, in which I find they thrive better than when they have a warm Situation. Where theſe Plants have ſucceeded beſt, they have produc'd Flowers, and perfected their Seeds, the fourth Year from Seeds: but in other Places I have known the Plants ſtand three or four Years after their Removal, without making the leaſt Progreſs.

The fourth Sort is alſo a Native of *Siberia*: this grows to be a Shrub of about five or ſix Feet high, bearing Cluſters of yellow Flowers, which come out early in the Spring. This Sort thrives better in *England* than the former; but they both do beſt in a cold Situation, and a moiſt Soil. The firſt Sort is generally propagated in the *Engliſh* Nurſeries, by Suckers taken from the Roots of the old Trees: but theſe are not ſo valuable as thoſe which are raiſed from Seeds; becauſe they do not make near ſo great Progreſs in their Growth, and are very ſubject to ſend forth many Suckers from their Roots, whereby the Ground will be fill'd with them, to a great Diſtance; and theſe Suckers will draw away the Nouriſhment from the old Plants, whereby their Growth will be greatly retarded.

If this is propagated by Seeds, they ſhould be ſown on a Bed of light Earth, about the Latter-end of *March*, or the Beginning of *April*. If the Bed is well expoſed to the Sun, the Plants will appear in about five or ſix Weeks, and will require no farther Care but to keep them clear from Weeds. In this Bed the Plants may remain till the following Spring, when they ſhould be tranſplanted into a Nurſery about the Latter-end of *March*, placing them in Rows at three Feet Diſtance Row from Row, and a Foot and an half aſunder in the Rows. In this Nurſery they may remain two Years, by which time they will be fit to tranſplant where they are deſign'd to grow: for as theſe Trees ſend forth long tough Roots, ſo, if they ſtand long unremov'd, the Roots will extend themſelves to a great Diſtance; therefore they muſt be cut off when the Plants are tranſplanted, which ſometimes occaſions their miſcarrying.

Theſe Trees will grow well upon almoſt every Soil, but beſt in a light ſandy Ground, in which they will ſhoot ſix or eight Feet in one Year; and while the Trees are young, they make an agreeable Appearance, being well furniſh'd with Leaves; but when they are old, the Branches being frequently broken by Winds, render them unſightly; eſpecially if they ſtand in an expoſed Place. The Leaves of theſe Trees come out the Beginning of *May*, and they flower in *June*, and frequently ripen Seeds in *England*.

Theſe Trees were formerly in great Requeſt in *England*, and were frequently planted in Avenues, and for ſhady Walks; but their Branches being frequently broken, or ſplit down by the Wind in Summer, when they are cloath'd with Leaves, render theſe Trees improper for this Purpoſe; and their Leaves coming out late in the Spring, and falling off early in the Autumn, occaſion'd their being neglected for many Years: but of late they have been much in Requeſt again, ſo that the Nurſeries have been clear'd of theſe Trees; though in a few Years they will be as little inquired after as heretofore, when thoſe which have been lately planted begin to have their ragged Appearance.

The Flowers of this Tree are produced in long pendulous Bunches, and, when they are in plenty, make a fine Appearance, being of an elegrant White, and they have an agreeable Odour; but they ſeldom laſt longer than a Week in Beauty.

The fifth Sort is a Native of the warmeſt Parts of *America*, where it grows to the Height of thirty Feet, having a large Trunk: the Branches are produced irregularly on every Side: theſe are cloathed with winged Leaves, which are generally compoſed of ſeven large roundiſh Lobes, each having a ſhort Footſtalk. The Flowers are produc'd on the Branches before the Leaves put out: for in their native Soil theſe Trees caſt their Leaves in the great Droughts; whereas thoſe Plants which are preſerved in *England*, retain their Leaves throughout the Year.

This is a tender Plant; ſo will not live through the Winter in *England*, unleſs it is placed in a warm Stove. It is propagated by Seeds, which ſhould be ſown in the Spring upon an Hot-bed; and, when the Plants come up, they muſt be treated in the ſame manner as hath been directed for other tender Plants, and ſhould be conſtantly kept in the Tan-bed in the warm Stove. There are ſome of theſe Plants in *England* ten Feet high; but they have not produc'd Flowers. This is call'd Dogwood in *America*.

RONDELETIA.

The *Characters* are;

It hath a ſalver-ſhap'd Flower, conſiſting of one Leaf, which is tubulous, and reſts on the Empalement; which Empalement afterward becomes a roundiſh coronated Fruit, divided into two Cells, containing many ſmall Seeds.

We know but one *Species* of this Plant; *viz.*

Rondeletia *arboreſcens, tini facie. Plum. Nov. Gen.* Tree-like Rondeletia, with the Face of Laurus Tinus.

This Plant was diſcover'd by Father *Plumier* in *America*, who gave it this Name in Honour to *Gulielmus Rondeletius*, a famous Phyſician of *Montpelier*.

The Seeds of this Plant were ſent to *England* by Mr. *Robert Millar*, Surgeon, who collected them on the North Side of the Iſland of *Jamaica*, where the Trees grow plentifully, as alſo in ſeveral Parts of the *Spaniſh Weſt-Indies*.

This Plant, being very tender, cannot be preſerv'd in *England*, unleſs it is kept in a warm Stove. It is propagated by Seeds, which ſhould be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they muſt be tranſplanted into ſeparate ſmall Pots, and plunged into a moderate Hot-bed of Tanners Bark, where they muſt be treated in the ſame manner as hath been directed for the Pereſkia; and in Winter muſt be plac'd in the Tan-bed in the Stove, where theſe Plants will thrive, and in two or three Years will flower; when they will make an agreeable Variety amongſt other tender Exotic Plants.

ROSA, The Roſe-tree.

The *Characters* are;

The Flower is compoſed of ſeveral Leaves, which are placed circularly, and expand in a beautiful Order; whoſe leafy Flower-cup afterward becomes a roundiſh or oblong fleſhy Fruit, incloſing ſeveral angular hairy Seeds: to which may be added, It is a weak pithy Shrub, for the moſt part beſet with Prickles, and hath pinnated Leaves.

The *Species* are;

1. Rosa *ſylveſtris inodora, ſeu canina. Park. Theat.* The Wild-briar, Dog-roſe, or Hep-tree.

2. Rosa *ſylveſtris, fructu majore hiſpido. Raii Syn.* Wild-briar, or

Dog-roſe, with large prickly Heps.

3. Rosa *ſylveſtris pomifera major noſtras. Raii Syn.* The greater *Engliſh* apple-bearing Roſe.

4. Rosa *pumila ſpinoſiſſima, foliis pimpinellæ glabris, flore albo. J. B.* The Dwarf wild-burnet-leav'd Roſe.

5. Rosa *pumila ſpinoſiſſima, foliis pimpinellæ glabris, ex luteo & viridi eleganter variegatis.* The Dwarf wild-burnet-leav'd Roſe, with variegated Leaves.

6. Rosa *pimpinella minor Scotica, floribus ex albo & carneo eleganter variegatis. Pluk. Alm.* The ſtriped *Scotch* Roſe.

7. Rosa *ſylveſtris, foliis odoratis. C. B. P.* The Sweet-briar, or Eglantine.

8. Rosa *ſylveſtris odora ſive Eglanteria, flore duplici. Park. Parad.* Sweet-briar with a double Flower.

9. Rosa *ſylveſtris, foliis odoratis, flore pleno.* The Sweet-briar with a very double Flower.

10. Rosa *ſylveſtris, foliis odoratis, ſempervirens, flore pleno incarnato.* Ever-green Sweet briar, with a double pale Flower.

11. Rosa *rubra multiplex. C.B.P.* The double red Roſe.

12. Rosa *Damaſcena. Park. Parad.* The Damaſk Roſe.

13. Rosa *Provincialis, ſive Hollandica, Damaſcena. Park. Parad.* The Damaſk *Provence* Roſe.

14. Rosa *Provincialis major, flore pleno ruberrimo. Boerh. Ind. Alt.* The red *Provence* Roſe.

15. Rosa *centifolia Batavica. Cluſ. H.* The *Dutch* hundred-leav'd Roſe.

16. Rosa *Provincialis ſpinoſiſſima, pedunculo muſcoſo. Boerh. Ind. Alt.* The Moſs *Provence* Roſe.

17. Rosa *Provincialis rubra. Park. Parad.* The common *Provence* Roſe.

18. Rosa *holoſericea ſimplex. Park. Parad.* The ſingle Velvet Roſe.

19. Rosa *holoſericea multiplex. Park. Parad.* The double Velvet Roſe.

20. Rosa *odore cinnamomi, flore pleno. C. B. P.* The double Cinnamon Roſe.

21. Rosa *odore cinnamomi, ſimplex. C. B. P.* The ſingle Cinnamon Roſe.

22. Rosa *lutea ſimplex. C. B. P.* The ſingle yellow Roſe.

23. Rosa *lutea multiplex. C. B. P.* The double yellow Roſe.

24. Rosa *ſylveſtris Auſtriaca, flore phœniceo. Park. Theat.* The *Auſtrian* Roſe.

25. Rosa *ſylveſtris Auſtriaca, flore totum luteum.* The yellow *Auſtrian* Roſe.

26. Rosa *uno ramo luteos, cæteris puniceos flores gerens ſimplices. Boerh. Ind. Alt.* The *Auſtrian* Roſe, with yellow Flowers upon one Branch, and purple Flowers on the other.

27. Rosa *alba vulgaris major. C. B. P.* The common white Roſe.

28. Rosa *alba minor. C. B. P.* The leſſer white Roſe.

29. Rosa *candida ſemiplena. J. B.* The ſemidouble white Roſe.

30. Rosa *incarnata. Park. Parad.* The Bluſh Roſe, or Maiden-bluſh.

31. Rosa *Præneſtina variegata plena. Hort. Eyſt.* The *York* and *Lancaſter* Roſe.

32. Rosa *rubro & albo variegata, Roſa mundi vulgo dicta. Raii Hiſt.* The Roſe of the World, or *Roſa mundi*.

33. Rosa *Francofurtenſis. Park. Parad.* The *Frankfort* Roſe.

34. Rosa *ſempervirens. Park. Parad.* The ever-green Roſe.

35. Rosa *omnium calendarum. H. R. Par.* The monthly Roſe.

36. Rosa *omnium calendarum, flore variegato.* The ſtriped monthly Roſe.

37. Rosa *ſine ſpinis, flore minore. C. B. P.* The Roſe without Thorns.

38. Rosa *ſine ſpinis, flore majore ruberrimo.* The royal Virgin Roſe.

39. Rosa *ſylveſtris Virginienſis. Raii Hiſt.* The wild *Virginian* Roſe.

40. Rosa *ſylveſtris Virginiana, flore majore pallido.* The wild *Virginian* Roſe, with a larger pale Flower.

41. Rosa *Americana moſchata, flore minore.* The *American* Muſk Roſe, with a ſmaller Flower.

42. Rosa *Americana odoratiſſima ſerotina, flore pallido pleno.* The moſt ſweet-ſcented *American* late-flowering Roſe, with a double Flower.

43. Rosa *moſchata, ſimplici flore. C. B. P.* The ſingle Muſk Roſe.

44. Rosa *moſchata, flore pleno. C. B. P.* The double Muſk Roſe.

45. Rosa *moſchata ſempervirens. C. B. P.* The ever-green Muſk Roſe.

46. Rosa *Belgica, ſive vitrea, flore rubro, Rea. Flor.* The red *Belgic* Roſe.

47. Rosa *Belgica, ſive vitrea, flore rubicante. Rea. Flor.* The Bluſh *Belgic* Roſe.

48. Rosa *marmorea. Rea. Flor.* The marbled Roſe.

49. Rosa *Provincialis, flore ſimplici.* The ſingle *Provence* Roſe.

50. Rosa *Damaſcena, flore ſimplici.* The ſingle Damaſk Roſe.

51. Rosa *pimpinella minor Scotica, flore livide rubente.* The Dwarf *Scotch* Roſe, with a bluiſh-red Flower.

The firſt Sort of Roſe grows wild in the Hedges in moſt Parts of *England:* the Fruit of this Tree is made into a Conſerve for medicinal Uſe; but this is ſeldom cultivated in Gardens.

The ſecond, third, and fourth Sorts alſo grow wild in divers Parts of *England*; and are rarely preſerved in Gardens, unleſs for Variety-ſake.

The third Sort is a very tall-growing Shrub, having ſtrong upright Shoots; the Flowers are ſingle, and of a bright-red Colour; the Fruit is very large, and is by ſome Perſons made into a Sweet-meat; ſo the Plant is cultivated in many Gardens on that account.

The fourth Sort is of humble Growth, ſeldom riſing much above three Feet high; the Leaves are like thoſe of Burnet; the Flowers are white, ſingle, and have a muſky Scent.

The fifth Sort is a Variety of the fourth, and is preſerved by ſome for the Beauty of its ſtriped Leaves.

The ſixth Sort is found wild in *Scotland*, and has been by many ſuppoſed to be the ſame as the fourth Sort, but only differing therefrom in having variegated Flowers; which is a great Miſtake; for I have obſerv'd, where the two Sorts were cultivated on the ſame Soil for many Years, and yet retain'd a conſiderable Difference in the Size of the Plants, the *Scotch* Sort being not half ſo large as the other; yet the Flowers were much larger, the Leaves were leſs, and the Branches much weaker, than thoſe of the fourth Sort.

The laſt Sort here mention'd was rais'd from the Seeds of the *Scotch* Roſe; and altho' the Flowers were plain-colour'd, yet the whole Appearance of the Plant continues the ſame as the original Kind; which is a plain Proof of its being different from the fourth Sort.

The Sweet-briar, altho' wild in ſome Parts of *England*, yet is preſerv'd in moſt curious Gardens, for the extreme Sweetneſs of its Leaves, which perfumes the circumambient Air in the Spring of the Year, eſpecially after a Shower of Rain. The Flowers of this Sort, being ſingle, are not valu'd; but the Branches of the Shrubs are cut to intermix with Flowers to place in Baſons to adorn Halls, Parlours, *&c.* in the Spring of the Year, the Scent of this Plant being agreeable to moſt Perſons.

The double-flower'd Sweet-briar is preſerv'd on the account of its beautiful Flowers, as well as for the Sweetneſs of its green Leaves.

The other Sort, with very double Flowers, has been lately obtained from Seeds; and as the Flowers of this Kind are much more double than thoſe of the other, it has obtained the Preference with moſt People: the Flowers of this Sort have little Scent.

The ever-green Sweet-briar, with a double pale Flower, has been very lately obtained from Seeds: the Leaves of this Sort commonly continue green till the Spring, which has occaſion'd many Perſons to covet the Plants; but this is what has been obtained from Seeds ſeveral times, tho' not with a double Flower.

All the other Sorts of Roſes are originally of foreign Growth; but are hardy enough to endure the Cold of our Climate in the open Air, and produce the moſt beautiful and fragrant Flowers of any kind of Shrubs yet known: this, together with their long Continuance in Flower, has juſtly render'd them the moſt valuable of all the Sorts of flowering Shrubs; beſide, the great Variety of different Sorts of Roſes make a Collection of Flowers, either for Baſons, or in the Garden, without any other additional Mixture; and their Scent, being the moſt inoffenſive Sweet, is generally eſteemed by moſt Perſons.

But in order to continue theſe Beauties longer than they are naturally diſpoſed to laſt, it is proper to plant ſome of the monthly Roſes near a warm Wall, which will occaſion their Budding at leaſt three Weeks or a Month before thoſe in the open Air: and if you give them the Help of a Glaſs before them, it will bring their Flowers much forwarder, eſpecially where the Dung is placed to the Backſide of the Wall (as is practis'd in raiſing early Fruits): by this Method I have ſeen fair Roſes of this Kind blown in *February*; and they may be brought much ſooner, where People are curious this way.

You ſhould alſo cut off the Tops of ſuch Shoots which have been produced the ſame Spring, early in *May*, from ſome of theſe Sorts of Roſes which are planted in the open Air, and upon a ſtrong Soil: this will cauſe them to make new Shoots, which will flower late in Autumn; as will alſo the late removing the Plants in Spring, provided they do not ſuffer by Drought, as I have ſeveral times experienced, but particularly in the Year 1718. when I had Occaſion to remove a large Parcel of theſe Plants in *May*, juſt as they were beginning to flower: in doing of which I cut off all the Flower-buds; and, after having open'd a Trench in the Place where they were to be planted, I poured a large Quantity of Water, ſo as to render the Ground like a Pap; then I took up the Plants, and placed them therein as ſoon as poſſible, that their Roots might not dry; and after planting them, I water'd the Ground well again, and cover'd the Surface over with Mulch, to prevent its drying: after this I repeated watering the Plants all over two or three times a Week, in the Evening, until they had taken Root:

in about three Weeks time the Plants ſhot out again, and produc'd a great Quantity of Flowers in *Auguſt* and *September*, which were as fair as thoſe produced in *June*. This is the only Sort of Roſe for this Purpoſe, there being no other Sort which will flower early and late, except this.

The next Sort of Roſe which flowers in the open Air, is the Cinnamon, which is immediately follow'd by the Damaſk Roſe; then the Bluſh, and *York* and *Lancaſter* come; after which the *Provence*, *Dutch*, Hundred-leav'd White, and moſt other Sorts of Roſes, follow; and the lateſt Sorts are the two Muſk Roſes, which, if planted in a ſhady Situation, ſeldom flower until *September*; and if the Autumn proves mild, will continue often till the Middle of *October*.

The Plants of theſe two Sorts ſhould be placed againſt a Wall, Pale, or other Building, that their Branches may be ſupported; otherwiſe they are ſo ſlender and weak, as to trail upon the Ground: theſe Plants ſhould not be pruned until Spring, becauſe their Branches are ſomewhat tender; ſo that when they are cut in Winter, they often die after the Knife. Theſe produce their Flowers at the Extremity of the ſame Year's Shoots, in large Bunches; ſo that their Branches muſt not be ſhorten'd in the Summer, leſt thereby the Flowers ſhould be cut off. Theſe Shrubs will grow to be ten or twelve Feet high, and muſt not be check'd in their Growth, if you intend they ſhould flower well; ſo that they ſhould be placed where they may be allowed room.

The loweſt Shrub of all the Sorts here mentioned is the *Scotch* Roſe, which rarely grows above two Feet high; ſo that this muſt be placed among other Shrubs of the ſame Growth. The red Roſe and the *Roſa mundi* commonly grow from three to four Feet high, but ſeldom exceed that; but the Damaſk, *Provence*, and *Frankfort* Roſes grow to the Height of ſeven or eight Feet; ſo that in planting them great Care ſhould be taken to place their ſeveral Kinds, according to their various Growths, amongſt other Shrubs, that they may appear beautiful to the Eye.

The yellow Roſe, as alſo the *Auſtrian* Roſe, are both Natives of *America*: theſe were originally brought from *Canada*, by the *French*: the other Varieties, which are now in the Gardens, of theſe Sorts, have been accidentally obtained, and are preſerved by budding them on the other Sorts. The Shrubs of theſe Roſes ſeldom ſhoot ſo ſtrong as moſt of the other Sorts, eſpecially in the light Land near *London*; where they ſeldom produce their Flowers. Theſe are eſteemed for their Colour, being very different from all the other Sorts of Roſes: but as their Flowers have no Scent, and are of ſhort Duration, they do not merit the Price they are generally ſold at.

The *Frankfort* Roſe is of little Value, except for a Stock to bud the more tender Sorts of Roſes upon; for the Flowers ſeldom open fair, and have no Scent; but it being a vigorous Shooter, renders it proper for Stocks to bud the yellow and *Auſtrian* Roſes, which will render them ſtronger than upon their own Stocks; but the yellow Roſes ſeldom blow fair within eight or ten Miles of *London*; tho' in the Northern Parts of *Great Britain* they flower extremely well. This Sort muſt have a Northern Expoſure; for if it is planted too warm, it will not flower.

The Damaſk and monthly Roſe ſeldom flower well in ſmall confined

Gardens, nor in the Smoke of *London*; therefore are not proper to plant in ſuch Places; tho' they frequently grow very vigorouſly there: theſe always begin to ſhoot the firſt of any of the Sorts in the Spring; therefore frequently ſuffer from Froſt, in *April*, which often deſtroy all their Flowers.

The *Provence* Roſe, which is the moſt common Sort in *England*, is by far the moſt valuable of them all; tho' moſt of the other Sorts are preferr'd to it on account of their Scarcity: but the Flowers of this Sort are the faireſt, and have the moſt agreeable Scent, of any Sort yet known: and this is alſo very hardy, flowering in many Places where many of the others will ſcarcely live; which renders it ſtill more valuable: and if it was as rare to be ſeen as ſome other Shrubs, would be eſteemed perhaps more than any other.

There are at leaſt three Varieties of this Roſe, which are promiſcuouſly ſold by the Nurſery-men, under this Title; one of which is a low Shrub, ſeldom growing above three Feet high: the Flowers are much ſmaller, and the Buds rounder, and even; ſo that before the Flowers open, they appear as if they had been clipp'd with Sciſſars. This Mr. *Rea* calls the dwarf red Roſe; there are few Thorns on the Branches The other Sort is taller, and the Flowers are large, but not ſo well ſcented as the common *Provence* Roſe.

All the Sorts of Roſes may be propagated either from Suckers, Layers, or by budding them upon Stocks of other Sorts of Roſes; which latter Method is only practiſed for ſome peculiar Sorts, which do not grow very vigorous upon their own Stocks, and ſend forth Suckers very ſparingly; or where a Perſon is willing to have more Sorts than one upon the ſame Plant; but then it muſt be obſerved, to bud ſuch Sorts upon the ſame Stock as are nearly equal in their Manner of Growth; for if there be a Bud of a vigorous-growing Sort, and ſome others of weak Growth, the ſtrong one will draw all the Nouriſhment from the weaker, and intirely ſtarve them.

The beſt Sort for Stocks is the *Frankfort* Roſe, which is a vigorous Grower, and produces ſtrong clean Shoots, which will take the Buds much better than any other Sort of Roſe: but you muſt be very careful to keep the Stock after Budding intirely clear from Suckers or Shoots at the Bottom; for if they are permitted to remain on, they will, in a ſhort time, ſtarve the Buds. The beſt Seaſon for budding of Roſes is in *June*; the Manner of doing it, being the ſame as for Fruit-trees, need not be repeated here.

If you would propagate them from Suckers, they ſhould be taken off annually in *October*, and tranſplanted out either into a Nurſery in Rows (as hath been directed for ſeveral other Sorts of flowering Shrubs), or into the Places where they are to remain: for if they are permitted to ſtand upon the Roots of the old Plants more than one Year, they grow woody, and do not form ſo good Roots as if planted out the firſt Year; and ſo there is more Danger of their not ſucceeding.

But the beſt Method to obtain good-rooted Plants is, to lay down the young Branches in Autumn, which will take good Root by the Autumn following (eſpecially if they are watered in very dry Weather), when they may be taken from the old Plants, and tranſplanted where they are to remain. The Plants which are propagated by Layers, are not ſo apt to ſend out Suckers from their Roots, as thoſe which are from Suckers; therefore ſhould be preferr'd before them; becauſe they may be much eaſier kept in Compaſs: and theſe will alſo flower much ſtronger. Theſe Plants may be tranſplanted any time from *October* to *April*; but when they are deſign'd to flower ſtrong the firſt Year after planting, they ſhould be planted early; tho', as I ſaid before, if they are planted late in the Spring, it will cauſe them to flower in Autumn, provided they do not ſuffer by Drought.

Moſt of theſe Sorts delight in a rich moiſt Soil, and an open Situation, in which they will produce a greater Quantity of Flowers, and thoſe much fairer, than when they are upon a dry Soil, or in a ſhady Situation. The Pruning which they require is only, to cut out dead Wood, and the Suckers cleared off, which ſhould be done every Autumn: and if there are any very luxuriant Branches, which draw the Nouriſhment from the other Parts of the Plant, they ſhould be taken out, or ſhorten'd, to cauſe it to produce more Branches, if there be Occaſion for them to ſupply a Vacancy; but you muſt avoid crouding them with Branches, which is as injurious to theſe Plants as to Fruit-trees; for if the Branches have not an equal Benefit of the Sun and Air, they will not produce their Flowers ſo ſtrong, nor in ſo great Plenty, as when they are more open, and better expos'd to the Sun; ſo that the Air may circulate the more freely between them.

ROSA SINENSIS. *Vide* Ketmia Sinenſis.

ROSE THE GUILDER. *Vide* Opulus.

ROSE-TREE. *Vide* Roſa.

ROSEMARY. *Vide* Roſmarinus.

ROSMARINUS, Roſmary.

The *Characters* are;

It is a verticillate Plant, with a labiated Flower, conſiſting of one Leaf, whoſe Upper-lip or Creſt is cut into two Parts, and turns up backward, with crooked Stamina, *or Chives: but the Under-lip, or Beard, is divided into three Parts; the middle Segment being hollow like a Spoon: out of the two or three-teeth'd Flower-cup ariſes the Pointal, attended, as it were, by four Embryoes, which afterward turn to ſo many Seeds, that are roundiſh, and are incloſed in the Flower-cup.*

The *Species* are;

1. Rosmarinus *hortenſis, latiore folio. Mor. Hiſt.* Broad-leav'd Garden Roſmary.

2. Rosmarinus *hortenſis, anguſtiore folio. C. B. P.* Narrow-leav'd Garden Roſmary.

3. Rosmarinus *ſtriatus, ſive aureus. Park. Theat.* The Gold-ſtriped Roſmary.

4. Rosmarinus *hortenſis, anguſtiore folio, argenteus. H. R. Par.* The narrow-leav'd Silver-ſtrip'd Roſmary.

5. Rosmarinus *Almerienſis, flore majore ſpicato purpuraſcente. Tourn.* Roſmary of *Almeria*, with a large ſpiked purpliſh Flower.

6. Rosmarinus *ſpontaneus, folio eleganter variegato. Boerh. Ind.* Broad-leav'd Roſmary, with an elegant ſtriped Leaf.

Dr. *Linnæus* has ſeparated this Genus, with ſome others, from the Claſs where they have by all Botaniſts been ranged, on account of their having but two *Stamina* in each Flower: whereas the other Plants of this Claſs have four, two long, and two ſhort: but this is not altogether juſtifiable; ſince in every other Character,

racter, they agree with their Congeners.

Theſe Plants grow plentifully in the Southern Parts of *France*, in *Spain*, and in *Italy*, where, upon dry rocky Soils near the Sea, they thrive prodigiouſly; but, notwithſtanding they are produc'd in warm Countries, yet they are hardy enough to bear the Cold of our ordinary Winters very well in the open Air, provided they are planted upon a poor, dry, gravelly Soil, on which they will endure the Cold much better than upon a richer Ground, where the Plants will grow more vigorouſly in Summer, and ſo be more ſubject to Injury from Froſt; and they will not have ſo ſtrong an aromatic Scent as thoſe upon a dry barren Soil.

Thoſe Sorts with ſtriped Leaves are ſomewhat tender, and ſhould either be planted near a warm Wall, or in Pots filled with freſh light Earth, and ſheltered in Winter under a Frame, otherwiſe they will be ſubject to die in froſty Weather.

All theſe Sorts may be propagated by planting Slips or Cuttings of them in the Spring of the Year, upon a Bed of freſh light Earth; and when they are rooted, they may be tranſplanted into the Places where they are deſign'd to grow; but it will be proper to do this about the Beginning of *September*, that they may take Root before the froſty Weather comes on; for if they are planted too late in Autumn, they ſeldom live thro' the Winter, eſpecially if the Weather proves very cold; ſo that if you do not tranſplant them early, it will be the better Method to let them remain unremoved until *March* following, when the Froſt is over, obſerving never to tranſplant them at a Seaſon when the dry Eaſt Winds blow, but rather defer the doing of it until the Seaſon is more favourable; for if they are planted when there are cold drying Winds, they are apt to dry up their Leaves, and kill them: but if there happen to be ſome warm Showers ſoon after they are removed, it will cauſe them to take Root immediately; ſo that they will require no farther Care, but to keep them clear from Weeds

Altho' theſe Plants are tender when planted in a Garden, yet when they are by Accident rooted in a Wall (as I have ſeveral times ſeen them), they will endure the greateſt Cold of our Winters, tho' expoſed much to the cold Winds; which is occaſioned by the Plants being more ſtinted and ſtrong, and their Roots being drier.

The Flowers of the narrow-leav'd Garden Sort are uſed in Medicine, as are alſo the Leaves and Seeds.

ROYENA, *African* Bladder-nut.

The *Characters* are;

The Empalement of the Flower is of one Leaf, ſwelling out in a Belly, and blunt at the Brim, where it is indented in five Parts: the Flower is of one Leaf, having a Tube the Length of the Empalement; but ſpreads open at the Top, where it is ſlightly cut into five Parts: in the Centre is ſituated the hairy Pointal, which is attended by ten ſhort Stamina: *the Pointal afterward becomes an oval Capſule, having four Furrows opening in one Cell, in which are contained four oblong triangular Seeds.*

The *Species* are;

1. Royena *foliis ovatis. Lin. Hort. Cliff. African* Bladder-nut, with a ſingle ſhining Leaf.

2. Royena *foliis lanceolatis glabris. Flor. Leyd. African* Bladder-nut, with ſmooth ſpear-ſhap'd Leaves; by ſome call'd *African* Whortle-berry.

3. Royena *foliis lanceolatis hir-*

ſutis. Flor. Leyd. African Bladder-nut, with hairy ſpear-ſhap'd Leaves.

The firſt Sort has been long an Inhabitant of ſome curious Gardens in *England:* but it is not very common here; for it is very difficult to propagate. The ſureſt Method of doing it, is by laying down the young Branches, and theſe will ſeldom take Root under two Years. I have alſo raiſed a few by Cuttings, but it was two Years before they put out Roots: and it was three Years before they began to grow upward; and then they made but little Progreſs.

This Plant will grow eight or ten Feet high, and puts out its Branches on every Side; ſo may be trained up to a regular Head: theſe Branches are cloathed with oval ſhining Leaves, which are placed alternately, and continue all the Year; ſo that it makes an agreeable Variety among other Exotic Plants in the Green-houſe, during the Winter-ſeaſon: the Flowers are produced from the Wings of the Leaves, along the Branches; but as they have little Beauty, few Perſons regard them. I have not obſerved any Fruit produced by theſe Plants in *England.* This was deſcribed and figured by Dr. *Herman,* who was Profeſſor of Botany at *Leyden,* under the Title of *Staphylodendron Africanum, folio ſingulari lucido.*

The other two Sorts are at preſent rare in the *Engliſh* Gardens; but in the curious Gardens in *Holland* they are in greater Plenty. They are all of them Natives of the *Cape of Good Hope;* ſo are hardy enough to live in a common Green-houſe, with Myrtles and Orange-trees: theſe Plants may be treated in the ſame way

Theſe two Sorts are as difficult to propagate as the firſt; which is the Cauſe of their Scarcity: the beſt time to lay down the Branches of theſe Plants is in *Auguſt;* but the Cuttings ſhould be planted in *July:* they muſt be planted in Pots, and ſhaded from the Sun in Summer, and ſheltered under a Frame in Winter.

RUBIA, Madder.

The *Characters* are;

The Flower conſiſts of one ſingle Leaf, which is cut into four or five Segments, and expanded at the Top: the Flower-cup afterward becomes a Fruit compoſed of two juicy Berries, cloſely joined together, containing Seed, for the moſt part hollow'd like a Navel: to which may be added, The Leaves being rough, and ſurrounding the Stalks in Whorles.

The *Species* are;

1. RUBIA *tinctorum ſativa. C. B. P.* Cultivated Dyers Madder.
2. RUBIA *ſylveſtris aſpera, quæ ſylveſtris Dioſcoridis. C. B. P.* Wild Madder.
3. RUBIA *ſylveſtris Monſpeſſulana major. J. B.* Great wild Madder of *Montpelier.*

The firſt of theſe Sorts was formerly cultivated in divers Parts of *England,* for the Dyers Uſe; but of late Years it has been wholly neglected; ſo that at preſent I believe there is ſcarce any of it cultivated, except in ſmall Quantities for medicinal Uſe: how this Plant came to be ſo much neglected in *England,* I cannot imagine, ſince it will thrive as well here as in any Country in *Europe;* and the Conſumption of it in *England* is pretty large; for I have been informed, that we pay upwards of 30,000 *l.* annually for this Commodity, which might be eaſily ſav'd to the Nation, were it cultivated here. At preſent the greateſt Quantity of is is cultivated in *Flanders* and *Holland;* from whence we are annually furniſh'd with it, in three different Manners, and diſtinguiſh'd by the Names of Madder in the Branch, Madder in the Bundle, and Madder unbundled. The firſt Sort is brought to us in the Root, as it comes out of the Ground, without any other Preparation than that of being dried. The ſecond Sort is that of Bunch Madder, or ſuch as is made into Bundles, which is Madder in Branch, firſt freed from the Bark and the Pith, then ground by a Mill into groſs Powder, as we buy it. The third Sort is the Madder unbundled, that is, the Branched Madder ground into Powder; but the Bunched Madder, or that in Bundles, is the beſt, which, for its Excellency, when it is freſh, is made into Bales, or put into Caſks: 'tis of a pale Red; but, as it grows older, increaſes its Colour to a fine Red: that of *Zealand* is eſteemed the beſt for the Dyers Uſe.

In the Year 1727. I obſerv'd a great Quantity of this Plant cultivated in *Holland*, between *Helvoetſluice* and the *Brill*; and it being the firſt time I had ever ſeen any conſiderable Parcel of it, I was tempted to make ſome Inquiries about its Culture, and take ſome Minutes of it down upon the Spot, which I ſhall here inſert, for the Uſe of ſuch as may have Curioſity to attempt the Culture of it.

In Autumn they plow the Land, where they intend to plant Madder, in the Spring, and lay it in high Ridges, that the Froſt may mellow it; in *March* they plow it again; and at this Seaſon they work it very deep, laying it up in Ridges eighteen Inches aſunder, and about a Foot high; then about the Beginning of *April*, when the Madder will begin to ſhoot out of the Ground, they open the Earth about their old Roots, and take off all the Side-ſhoots, which extend themſelves horizontally, juſt under the Surface of the Ground, preſerving as much Root to them as poſſible: theſe they tranſplant immediately upon the Tops of the new Ridges, at about a Foot apart, obſerving always to do this when there are ſome Showers, becauſe then the Plants will take Root in a few Days, and will require no Water.

When the Plants are growing, they carefully keep the Ground hoed, to prevent the Weeds from coming up between them; for if they are ſmothered by Weeds, eſpecially when young, it will either deſtroy or weaken them ſo much, that they ſeldom do well after. In theſe Ridges they let the Plants remain two Seaſons, during which time they keep the Ground very clean; and at *Michaelmas*, when the Tops of the Plants are decay'd, they take up the Roots, and dry them for Sale. This is what I could learn of their Method of cultivating this Plant; to which I will ſubjoin a few Obſervations of my own, which I have ſince made upon the Culture of Madder in *England*. And, firſt, I find there is no Neceſſity for laying the Ground up in Ridges in *England*, as is practiſed by the *Dutch* (eſpecially in dry Land), becauſe the Places where I ſaw it were very wet Land, which is often floated in Winter; ſo that if the Plants were not elevated upon Ridges, their Roots would rot in Winter. Secondly, They ſhould be planted at a greater Diſtance, in *England*; the Rows ſhould be at leaſt three Feet Diſtance, and the Plants eighteen Inches aſunder in the Rows; for as they extend themſelves pretty far under-ground, ſo, where they are planted too near, their Roots will not have room to grow. And, thirdly, I find, that if all the horizontal Roots are deſtroyed from time to time, as they are produc'd, it will cauſe the large downright Roots to be much bigger; in which the Goodneſs of this Commodity chiefly conſiſts: for if the upper Roots are ſuffered to remain, they will draw off the principal Nouriſhment from the downright Roots, as I have experienced; for I planted a few Roots upon the ſame Soil and Situation, which were of equal Strength, and rooted equally well: half of theſe I hoed round, and cut off the horizontal Roots; and the other Half I permitted the horizontal Roots to remain on; and when I took them all up, thoſe which I had hoed about, and kept clear from horizontal Roots, were almoſt as large again as the other, and the Roots were double the Weight; which plainly proves it neceſſary to cut off thoſe ſuperficial Roots: ſo that where this Plant is cultivated in Quantity, it will be an excellent Method to uſe the Hoeing-plough, to ſtir the Ground, and deſtroy the Weeds: for, with this Inſtrument, a large Quantity of Ground may be kept clean, at a ſmall Expence: and as this will ſtir the Ground much deeper than a common Hoe, it will cut off the ſuperficial Roots, and thereby improve the principal Roots.

This Crop of Madder ſhould be ſhifted into freſh Land; for the Ground which has had one Crop, will not be fit to receive another in leſs than four Years; during which time any other annual Crop may be cultivated on the Land.

The manner of drying and preparing theſe Roots for Uſe, I am not acquainted with, having never had an Opportunity of ſeeing that Part, ſo can give no Inſtructions concerning it; but whoever ſhall have Curioſity enough to cultivate this uſeful Plant, might eaſily inform themſelves, by going over to *Holland* at the Seaſon of taking up the Roots.

What I could learn from the People with whom I converſed in *Holland* on this Affair, was, that they pared off the outſide Rind of the Roots, which is dried by itſelf, and is called Mull-madder. Then they pared off another fleſhy Part of the Root, which is made into another Madder, and is called Number O; but the Inſide, or Heart of the Root, is called Crop-madder. The firſt Sort is not worth above fifteen or ſixteen Shillings *per* hundred Weight; the ſecond Sort is ſold at about forty Shillings; but the third Sort will ſell for five Pounds *per* Hundred. I have ſince been inform'd, that there is no Neceſſity of dividing it into theſe three Sorts for Uſe; for if the Whole is dried, and ground together, it will anſwer the Dyers Purpoſe full as well. Theſe Roots muſt be dried on a Kiln, before they are ground to Powder: for which Purpoſe, I ſuppoſe, the ſame as are uſed for drying of Malt might be made uſeful for this Commodity.

By ſome few Experiments which I made, I imagine that one Acre of good Madder, when fit to take up for Uſe, will be worth above one hundred Pounds; ſo that if it were to ſtand three Years in the Ground, and to be planted on Land of three Pounds *per* Acre, it would pay exceeding well; conſidering the annual Culture (if perform'd by a Plough) will be no great Expence; the principal Charge being in the firſt preparing of the Land, and the planting: but whoever has a mind to cultivate this Plant, might rent very good Land for this Purpoſe, for twenty five or thirty Shillings *per* Acre, at a Diſtance from *London*, but near ſome Navigation.

The two Sorts of wild Madder are of no Uſe; though their Roots ſeem to be of the ſame Quality with the manured Sort; and as they are never cultivated in Gardens, it is needleſs to ſay any thing more of them in this Place.

Theſe Plants love a looſe Soil, neither too dry nor over-wet; but will do better on a dry than on a wet Soil, becauſe in ſuch Places the Roots are apt to rot in Winter.

RUBEOLA, Petty-madder.

The *Characters* are;

It hath a funnel-ſhaped Flower, conſiſting of one Leaf, which is ſlightly cut into four Parts at the Brim; reſting on the Empalement, which is ſometimes double, and ſometimes ſingle: this Empalement afterward becomes a Fruit, compoſed of two naked Seeds,

The *Species* are;

1. Rubeola *latiori folio. Inſt. R. H.* Broad-leav'd Petty-madder.

2. Rubeola *anguſtiore folio. Inſt. R. H.* Narrow-leav'd Petty-madder.

3. Rubeola *vulgaris quadrifolia lævis, floribus purpuraſcentibus. Inſt. R. H.* Common ſmooth four-leav'd Petty-madder, with purpliſh Flowers, commonly called Squinancy-wort.

4. Rubeola *Luſitanica aſpera, floribus purpuraſcentibus. Inſt. R. H.* Rough Petty-madder of *Portugal*, with purpliſh Flowers.

5. Rubeola *Cretica ſaxatilis fruticoſa, gallii folio, flore purpureo violaceo. Tourn. Cor.* Shrubby rock Petty-madder of *Candy*, with a Ladies-bedſtraw-leaf, and a violet purple Flower.

6. Rubeola *Cretica ſaxatilis fruteſcens, flore flaveſcente. Tourn. Cor.* Shrubby rock Petty-mrdder of *Candy*, with a yellowiſh Flower.

7. Rubeola *Cretica fœtidiſſima fruteſcens myrtifolia, flore magno ſuave-rubente. Tourn. Cor.* The moſt ſtinking ſhrubby Petty-madder of *Candy*, with a Myrtle-leaf, and a large pale-red Flower.

8. Rubeola *Orientalis fœtida fruticoſa ſerpyllifolia, flore parvo ſuave-rubente. Tourn. Cor.* Shrubby ſtinking Eaſtern Petty-madder, with a Mother-of-thyme-leaf, and a ſmall pale-red Flower.

9. Rubeola *Orientalis, foliis gallii, flore multiplici ex viridi flaveſcente. Tourn. Cor.* Eaſtern Petty-madder, with many greeniſh-yellow Flowers.

The firſt, ſecond, fourth, and ninth Sorts are annual Plants, which decay ſoon after they have perfected their Seed. Theſe are preſerved in the Gardens of thoſe Perſons who are curious in Botany, for the ſake of Variety. They are very hardy Plants, which require no other Care than to clear them from Weeds: for if they are permitted to ſcatter their Seeds, the Plants will come up, and maintain their Place, if they are not overborne with larger Weeds. The Seeds of theſe Plants may be ſown either in Spring or Autumn, in the Places where they are to remain, which may be in almoſt any Soil; but they love an open Situation.

The third Sort grows wild on chalky Hills, in divers Parts of *England*, where the Branches trail on the Ground, and produce Tufts of purpliſh Flowers from the Joints where the Leaves are ſet on; which open in *June*, and the Seeds are ripe in *Auguſt*; but the Roots abide many Years. This Plant is eſteemed efficacious in the Cure of Quinſeys, either taken inwardly, or outwardly applied.

The fifth, ſixth, ſeventh, and eighth Sorts were diſcover'd by Dr. *Tourne-*

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ſort in the *Levant*. Theſe are abideing Plants, which become ſhrubby, and, by their different Appearances, make an agreeable Variety in a Garden. They may be propagated by ſowing their Seeds on a Bed of freſh undunged Soil, in the Spring; and when the Plants come up, they muſt be kept clear from Weeds, and in very dry Weather they ſhould be refreſhed with Water; and when the Plants are about three or four Inches high, they ſhould be tranſplanted, ſome of each Sort, into Pots, that they may be ſhelter'd under an Hot-bed-frame in Winter; and the others into dry warm Borders of poor Earth; for in ſuch Places where the Plants grow ſlowly, they will live through the Winter, better than when they are planted in a rich Soil.

RUBUS, The Bramble, or Raſpberry-buſh.

The *Characters* are;

It hath a Flower conſiſting of five Leaves, which are placed circularly, and expand in form of a Roſe: the Flower-cup is divided into five Parts containg many Stamina, *in the Boſom of the Flower; in the Centre of which riſes the Pointal, which afterward becomes the Fruit, conſiſting of many Protuberances, and full of Juice.*

The *Species* are;

1. RUBUS *major, fructu nigro. J. B.* The common Bramble, or Blackberry-buſh.
2. RUBUS *minor, fructu cæruleo, J. B.* The Dewberry-buſh, or leſſer Bramble.
3. RUBUS *vulgaris major, fructu albo. Raii Syn.* The common greater Bramble-buſh, with white Fruit.
4. RUBUS *vulgaris major, folio eleganter variegato.* The greater Bramble-buſh, with a beautiful ſtriped Leaf.
5. RUBUS *Idæus ſpinoſus, fructu rubro. J. B.* The Raſpberry-buſh, Framboiſe, or Hind-berry.
6. RUBUS *Idæus ſpinoſus, fructu albo. J B.* The Raſpberry-buſh, with white Fruit.
7. RUBUS *Idæus ſpinoſus, fructu rubro ſerotino.* The Raſpberry-buſh, with late-red Fruit.
8. RUBUS *Idæus non ſpinoſus. J. B.* The Raſpberry-buſh, without Thorns.
9. RUBUS *Idæus, fructu nigro, Virginianus. Baniſter.* The *Virginian* Raſpberry-buſh, with black Fruit.
10. RUBUS *odoratus. Cornut. Virginian* flowering Raſpberry, *vulgo*.
11. RUBUS *Americanus, magis erectus, ſpinis rarioribus, ſtipite cæruleo. Pluk. Alm.* The Upright *Penſylvania* Bramble, or Raſpberry-buſh.
12. RUBUS *Alpinus humilis. J. B.* Dwarf Bramble of the *Alps*.
13. RUBUS *vulgaris, ſpinis carens. H. R. Par.* Common Bramble, without Spines.
14. RUBUS *ſpinoſus, foliis & flore eleganter laciniatis. Inſt. R. H.* Prickly Bramble, with Leaves and Flowers elegantly jagged.
15. RUBUS *flore albo pleno. H. R. Par.* The Bramble with double white Flowers.
16. RUBUS *non ſpinoſus, fructu nigro majore, Polonicus. Burr. Icon. Poland* Bramble without Thorns, and a larger black Fruit.

The firſt and ſecond Sorts are very common in Hedges, and upon dry Banks, in moſt Parts of *England*, and are rarely cultivated in Gardens. The third Sort was found by Mr. *Jacob Bobart*, in an Hedge not far from *Oxford*; and hath ſince been cultivated in ſeveral Gardens as a Curioſity. This does not only differ from the common Bramble in the Colour of the Fruit, but alſo in that of the Bark and Leaves, which, in this Sort, are of a lively Green; whereas thoſe of the common Sort are of a dark-brown Colour. The fourth Sort is a variety of the common Bramble, differing therefrom only in having ſtriped Leaves, for which it is preſerv'd by ſome Perſons who are curious in collecting variegated Plants.

The thirteenth Sort is in all reſpects like the common Bramble, excepting in this Particular, that there are no Thorns on the Branches or Leaves of this Sort.

The fourteenth Sort differs from the common Bramble in having the Leaves and Flowers curiouſly jagged.

The fifteenth Sort produces large Spikes of Flowers, which are very large and double, ſo that they make a fine Appearance, being almoſt as large and double as Roſes. This merits a Place in every good Garden; becauſe it may be planted in any abject Part of the Garden, under Trees in Wilderneſs-quarters; where it will thrive and flower as well as when planted in a more open Situation.

The ſixteenth Sort is not very common in *England*, but is a Native of *Poland*. This produces mnch larger Fruit than the common Bramble; ſo is preſerv'd in the Gardens of ſome curious Perſons for the ſake of Variety,

The Raſpberry-buſh is alſo very common in divers Woods in the Northern Counties of *England*; but is cultivated in all curious Gardens for the ſake of its Fruit. Of this there are three Kinds, which are cultivated commonly in Gardens near *London*; which are the common red, late-red, and the white Sorts; but the Sort without Thorns is leſs common at preſent than the other.

The ninth, tenth, eleventh, and twelfth Sorts are preſerv'd as Curioſities in ſeveral Gardens near *London*; as their Fruits are of no Value, they are ſcarcely worth cultivating, except in Botanic Gardens for Variety.

All the Sorts of Bramble are eaſily propagated by laying down of their Shoots, which in one Year will be ſufficiently rooted to tranſplant; ſo may then be cut off from the old Plants, and planted where they are deſign'd to remain; which ſhould be in Wilderneſs-quarters, or other abject Parts of the Garden, where they may have room to ſpread, without incommoding other Plants.

The Raſpberry is always cultivated in Gardens, for the ſake of the Fruit. There is a Variety of this Plant, which produces two Crops of Fruit every Year; one in the uſual Seaſon in *July*, and the ſecond Crop in *October*; and when the Autumn proves favourable, the ſecond Crop will ripen extremely well; and, in ſome Years, have been in as great Plenty as the firſt Crop.

The Raſpberries are always propagated by Suckers, tho' I ſhould prefer ſuch Plants as are raiſed by Layers; becauſe they will be better rooted, and not ſo liable to ſend out Suckers as the other; which generally produce ſuch Quantities of Suckers from their Roots, as to fill the Ground; and where they are not carefully taken out, or thinn'd, cauſe the Fruit to be ſmall, and in leſs Quantities; eſpecially when the Plants are placed near each other, which is too often the Caſe; for there are few Perſons who allow theſe Plants ſufficient room.

In preparing theſe Plants, their Fibres ſhould be ſhortened; but the

Buds, which are placed at a ſmall Diſtance from the Stem of the Plant, muſt not be cut off, becauſe thoſe produce the new Shoots the following Summer. Theſe Plants ſhould be planted about two Feet aſunder in the Rows, and four or five Feet Diſtance Row from Row; for if they are planted too cloſe, their Fruit is never ſo fair, nor will ripen ſo kindly, as when they have room for the Air to paſs between the Rows. The Soil in which they thrive beſt, is a freſh ſandy Loam, neither too moiſt nor over-dry; the Extreme of either being injurious to theſe Plants.

The time for dreſſing of them is in *October*, when all the old Wood, which produced Fruit the preceding Summer, ſhould be cut down to the Surface of the Ground, and the young Shoots muſt be ſhorten'd to about two Feet in Length; then the Spaces between the Rows ſhould be well dug, to encourage their Roots; and if you bury a very little rotten Dung therein, it will make them ſhoot vigorouſly the Summer following, and their Fruit will be much fairer. During the Summer-ſeaſon they ſhould be kept clear from Weeds, which, with the before-mention'd Culture, is all the Management they will require: but it is proper to make new Plantations once in three or four Years, becauſe thoſe are better than where the Plants are ſuffer'd to remain longer.

The *Virginian* flowering Raſpberry is commonly propagated in the Nurſeries as a flowering Shrub. The Flowers of this Sort are as large as ſmall Roſes; and there is a Succeſſion of them for two Months or more, ſo that they make an agreeable Variety during their Continuance. This Sort has produc'd Fruit in *England*, which were larger than thoſe of the common Sort; but had little Flavour. Theſe were ripe in *September*, and the Plants on which they produc'd, grew on a ſtrong Soil; but it is very rare to ſee any Fruit upon theſe Plants.

The eleventh Sort frequently produces Fruit in *England*, which are in Appearance very like the common Blackberry; but have a different Flavour. Theſe ripen late in the Autumn, and are not worth cultivating for their Fruit.

RUDBECKIA, Dwarf Sunflower, *vulgo*.

The *Characters* are;

It hath Male and Hermaphrodite Flowers incloſ'd in one common Empalement: the Empalement is compoſ'd of two Orders of Leaves: the Flower has a Border of Rays, and the Middle is occupied by a great Number of Hermaphrodite Flowers, which form a Cone: the Hermaphrodite Flowers are tubulous, and cut into five Parts at the Brim; theſe have the Pointal ſituated in their Centre, which is attended by five ſlender Stamina: *the Male Flowers, which grow round the Border, and form the Rays, are ſtretched out on one Side like a Tongue, which is cut into two or three Parts, and is plain: theſe are barren; but the Hermaphrodite Flowers have each a ſingle oblong Seed, which is four-cornered, ſucceeding them.*

This Genus of Plants was by Monſieur *Vaillant* titled *Obeliſcotheca*; but this being a compound Name, Dr. *Linnæus* has altered it to this of *Rudbeckia*, in Honour to Dr. *Rudbeck*, who was Profeſſor of Botany at *Upſal* in *Sweden*.

The *Species* are;

1. Rudbeckia *foliis lanceolato-ovatis alternis indiviſis, petalis radii integris. Flor. Virg.* Dwarf Sunflower, with yellow Rays, and a dark Middle.

2. Rudbeckia *foliis lanceolatis alternis indiviſis, petalis radii bifidis. Flor. Vir.* Dwarf *American* Sunflower, with purple Rays, which are bifid.

3. Rudbeckia *foliis compoſitis laciniatis. Lin. Virid. American* Sunflower, with Leaves which are compoſed of many Parts, and deeply cut.

4. Rudbeckia *foliis compoſitis anguſtioribus laciniatis American* Sunflower, with narrow cut compound Leaves.

5. Rudbeckia *foliis compoſitis integris. Flor. Leyd. American* Sun-flower, with whole compound Leaves.

6. Rudbeckia *foliis oppoſitis lanceolato-ovatis, petalis radii bifidis. Flor. Vir. American* Sunflower, with oval ſpear-ſhap'd Leaves plac'd oppoſite, and the Petals bifid.

The firſt Sort has been many Years preſerv'd in ſeveral curious Gardens in *England*. The Seeds of this Sort were ſent from *Virginia*, under the Title of *Chryſanthemum Americanum, doronici folio, flore luteo, umbone atro-purpureo*. This is a perennial Plant, which has rough oval Leaves growing cloſe to the Ground; from between theſe, in the Spring, the Footſtalks of the Flowers come out, which grow about two Feet high, having two or three ſmall Leaves placed alternately on each. The Top is crowned by a ſingle Flower, about the Size of a large Marigold, having a Border of yellow Rays, and a conical dark Middle or Umbone. Theſe Flowers are of long Duration; each ſingle Flower will continue a Month in Beauty; and as there is commonly a Succeſſion of them on the ſame Plant, they continue from the Middle of *July* to the Middle of *October* in Flower; which renders theſe Plants valuable. As this Sort rarely produces good Seeds in *England*, the Plants are commonly propagated by parting their Roots. The beſt time for this is in *March*, before they begin to ſhoot; but there muſt be Care had not to part the Roots into ſmall Heads, eſpecially where they are expected to flower ſtrong the ſame Summer; but in the Nurſeries they are uſually divided very ſmall for the Increaſe of the Plants. But the Plants which are raiſed from Off-ſets never flower ſo ſtrong as thoſe produced from Seeds; ſo that where the Seeds can be obtained, it is by much the beſt Method to propagate them that way.

The ſecond Sort is alſo a Native of *Virginia* and *Carolina*, and is more rarely to be found in the *Engliſh* Gardens than the firſt. The Leaves of this are longer, and more pointed, than the firſt, and are not ſo hairy. The Stalks of the Flowers are taller, and are frequently naked, having no Leaves coming out. The Flower has a Border of narrow long purple Rays, which are reflexed; ſo that theſe Flowers make not any great Appearance. However, as it is a ſcarce Plant, it is generally ſold at a good Price by thoſe who deal in curious Plants.

This Sort is propagated in the ſame manner as the former; but doth not produce ſo great Plenty of Off-ſets as the firſt, which occaſions the preſent Scarcity of the Plants.

When the Seeds of theſe Plants can be procured, they ſhould be ſown in Pots filled with freſh light Earth, and placed where they may have only the morning Sun, and frequently watered in dry Weather. Some of the Plants may probably come up the firſt Year; but the greateſt Part of them will not appear till the Spring following; ſo that the

Earth ſhould not be diſturbed; and if any of the Plants ſhould come up, they may be drawn out, and planted each into ſeparate Pots; but the Seed-pots ſhould be placed under a Frame, where they may be ſhelter'd from ſevere Froſt, but in mild Weather have a large Share of free Air; and in the Spring following the Plants will come up: when they have obtained Strength, they may be planted out into a Border of light Earth, about four Inches aſunder each Way. In this Bed they may remain until the Autumn following, when they ſhould be tranſplanted where they are to ſtand for Flowering, which ſhould be in a warm Situation; otherwiſe, if the Winter proves ſevere, they will be deſtroyed: therefore it is adviſeable to plant a few Plants of each Sort in Pots, that they may be placed under an Hot-bed-frame in Winter, to ſhelter them from hard Froſt, in order to preſerve the Kinds.

The third, fourth, and fifth Sorts are very hardy Plants, though they came originally from the ſame Country as the others. Theſe grow ſix or eight Feet high, and produce a great Number of Flowers in a ſort of Umbel on the Tops of the Branches; which are in Shape like ſmall Sunflowers, ſo have been by many ranged in that Genus. Theſe Plants flower in *July* and *Auguſt*, and are proper Furniture for the Borders of large Gardens. They are propagated by Off-ſets, which the Roots furniſh in plenty; and ſhould be planted in *October*, that they may get good Root before the Froſt ſets in; and then they will flower ſtrongly the following Summer: for when the Plants are removed in the Spring, they will not get good Root in the Ground before they put out their Flower-ſtems; ſo cannot produce their Flowers ſo large. Theſe alſo perfect their Seeds in *England* in favourable Years.

The ſixth Sort ſhould be treated in the ſame manner as the two firſt; but it is ſomewhat hardier, and will perfect its Seeds in good Summers in *England*, ſo may be propagated in greater Plenty.

RUELLIA.

The *Characters* are;

It hath a funnel-ſhaped Flower, conſiſting of one Leaf, which is cut into ſeveral Parts at the Brim, from whoſe Empalement ariſes the Pointal, which is fixed like a Nail in the Bottom of the Flower, and afterward becomes a membranaceous Pod, which opens into ſeveral Parts, and is filled with ſmall Seeds.

The *Species* are;

1. RUELLIA *Americana humilis, aſphodeli radice. Plum. Nov. Gen.* Dwarf *American* Ruellia, with an Aſphodel-root.

2. RUELLIA *Caroliniana, foliis oblongis anguſtis, flore purpureo. Houſt.* *Carolina* Ruellia, with narrow oblong Leaves, and a purple Flower.

3. RUELLIA *Americana humilis, parvo flore cæruleo, capſulis teretibus. Houſt.* Dwarf *American* Ruellia, with a ſmall blue Flower, and a taper Pod.

The firſt Sort was diſcovered by Father *Plumier* in *America*, who gave this Name to the Genus, in Honour of Dr. *Ruellius*, who was a very learned Perſon in Natural Hiſtory, and lived about two hundred Years paſt.

The ſecond Sort grows plentifully in *South-Carolina*, from whence it was brought into the *Engliſh* Gardens. This Sort grows much taller than the other two.

The third Sort was diſcover'd by the late Dr. *William Houſtoun* in *Jamaica*, who ſent the Seeds into *England*. The Flowers of this Kind are much ſmaller than thoſe of the other Sorts, and are of ſhort Duration, ſeldom continuing above one Day.

Theſe Plants are propagated by Seeds, which muſt be ſown early in the Spring in Pots filled with light rich Earth, and plunged into a moderate Hot-bed; and when the Plants come up, they muſt be tranſplanted each into a ſeparate ſmall Pot filled with rich Earth, and plunged into an Hot-bed of Tanners Bark, where they muſt be ſhaded from the Sun, until they have taken new Root; after which time they muſt have freſh Air admitted to them every Day in warm Weather, and be conſtantly watered three or four times a Week during the Summer-ſeaſon. If the Plants thrive well, thoſe of the firſt and third Sort will produce Flowers the *July* following, and will perfect their Seeds in *Auguſt*; but the Roots will continue, provided they are plunged into the Bark-bed in the Stove, and kept in a moderate Temperature of Heat.

The ſecond Sort, which riſes much higher than either of the other, will require to be ſhifted into larger Pots, by the Beginning of *June*; and then they ſhould be remov'd into the Stove, or a Glaſs-caſe, where they may have a larger Share of Air; otherwiſe they will draw up very weak, which will prevent their Flowering. This Sort dies to the Root every Winter; but if the Pots are placed in a warm Stove, their Roots will live, and put out again the following Spring, ſo may be continued ſeveral Years. This Sort will ripen Seeds very well, provided the Plants are ſhelter'd when they are in Flower.

The firſt Sort is by much the moſt beautiful Plant, the Flowers being four times as large as thoſe of either of the other Sorts, and are of a fine blue Colour; ſo that it makes a fine Appearance when it flowers; and as the Plants are ſmall, they may be kept in a little Compaſs, and are as well worth preſerving, as moſt tender Exotic Plants. When this Plant is ſhifted (which ſhould be the Beginning of *April*, before the new Leaves are put out), great Care ſhould be taken, that the Roots are not broken or bruiſed; for as they conſiſt of many thick Tubers, if theſe are injured, the Plant is frequently deſtroy'd.

RUSCUS, Knee-holly, or Butchers-broom.

The *Characters* are;

The Flower-cup conſiſts of one Leaf, which is cut into ſeveral Diviſions, out of which is produc'd a globular bell-ſhaped Flower, conſiſting alſo of one Leaf; in the Centre of which ariſes the Pointal, which afterward becomes a ſoft roundiſh Fruit, in which are inclos'd one or two hard Seeds.

The *Species* are;

1. Ruscus *myrtifolius aculeatus. Tourn.* The common Knee-holly, or Butchers-broom.

2. Ruscus *anguſtifolius, fructu folio innaſcente. Tourn.* Narrow-leav'd Butchers-broom, or *Alexandrian* Laurel, with the Fruit growing on the Leaves.

3. Ruscus *latifolius, fructu folio innaſcente. Tourn.* Broad-leav'd Butchers-broom, or *Alexandrian* Laurel, with the Fruit growing on the Leaves.

4. Ruscus *anguſtifolius, fructu ſummis ramulis innaſcente. Tourn.* Narrow-leav'd Butchers-broom, or *Alexandrian* Laurel, with the Fruit growing upon the Tops of the Branches.

5. Ruscus *latifolius crenatus, fructu e crenis foliorum prodeuntibus.* Broad leav'd *Alexandrian* Laurel,

with the Fruit growing upon the Edges of the Leaves.

6. Ruscus *vulgaris, folio ampliore. Hort. Paſ.* Butchers-broom with a larger Leaf.

7. Ruscus *vulgaris, folio anguſtiore.* Narrow-leav'd Butchers-broom.

The firſt Sort is very common in the Woods in divers Parts of *England*, and is rarely cultivated in Gardens. The Roots of this Kind are ſometimes uſed in Medicine; and the green Shoots are cut, and bound into Bundles, and ſold to the Butchers, who uſe it as Beſoms to ſweep their Blocks; from whence it had the Name of *Butchers-broom*.

The ſecond, third, fourth, ſixth, and ſeventh Sorts are hardy Plants; and though not Natives of *England*, yet may be preſerv'd in Gardens, if planted in a ſhady Situation, as in Wilderneſs-quarters, *&c.* where they ſerve to intermix with other Wood-plants, to make Variety. The ſecond and third Sorts are ſometimes uſed in Medicine.

The ſecond Sort has ſmall Leaves growing out of the Middle of the larger; ſo it is called *Bis-lingua* by ſome Writers. The other ſtands in the Diſpenſaries under the Title of *Laurus Alexandrina*.

Theſe Plants produce their Flowers and Fruit on the Middle of their Leaves, which are of the Size of ſmall Cherries; and being of a fine red Colour, make a pretty Appearance, eſpecially when there is plenty of the Fruit on the Plants. The Fruit is ripe in Winter; ſo that there are ſome Perſons who cut the Branches with their ripe Fruit, to put into Baſons, for adorning their Rooms at that Seaſon, when there are few other Plants in Beauty; and theſe will keep freſh a long time, when put into Water.

Theſe Plants may be propagated by parting their Roots in the Spring of the Year, before they begin to make new Shoots; obſerving, if the Seaſon be dry, to water them until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds; obſerving not to tranſplant or diſturb their Roots oftener than once in three Years; for when they are often remov'd, they ſeldom thrive well, and rarely produce Fruit.

The fifth Sort is tender, and muſt therefore be placed in Pots filled with freſh Earth, and in Winter put into the Green-houſe; but it ſhould be placed where it may have free Air in mild Weather, and be conſtantly watered: in which Management this Plant will ſend forth Stems ſix or eight Feet high, furniſh'd with Leaves from Bottom to Top; and in *June* will be cloſely ſet with Flowers upon their Edges, which make a very beautiful and odd Appearance, and renders it worthy of a Place in every good Collection of Plants. This is alſo propagated by parting the Roots, as the former, which ſhould not be done very often; becauſe, if the Roots are not permitted to remain ſome time to get Strength, they will produce but weak Shoots, and very few Flowers; and in the Strength of their Shoots, and Number of Flowers, the greateſt Beauty of theſe Plants conſiſts. This Sort grows plentifully at *Madeira*, from whence the Seeds may be procur'd; but this commonly lies in the Ground a Year before the Plants come up; ſo ſhould be ſown in Pots filled with freſh Earth, and placed under an Hot-bed-frame in Winter, to ſcreen the Seeds from the Froſt; and the following Spring the Plants will appear.

It is generally ſuppoſed, that it

was one of theſe Plants which the antient Victors were crown'd with; ſince from the Pliableneſs of their Branches, whereby they are very proper to wreathe into any Figure, as alſo from the Reſemblance thoſe Coronets, which we ſee ſurrounding the Heads of ſome antient Buſts, have to the Leaves of theſe Plants, it is a probable Conjecture at leaſt.

RUTA, Rue.

The *Characters* are;

The Flower for the moſt part conſiſts of four hollow Leaves, which are placed orbicularly, and expand in form of a Roſe; out of whoſe Flower-cup ariſes the Pointal, which afterward becomes a roundiſh Fruit, which is generally four-cornered, and compos'd of four Cells fix'd to an Axis, *and full of ſmall angular Seeds.*

The *Species* are;

1. RUTA *major hortenſis latifolia. Mor. Hiſt.* The common broad-leav'd Garden-rue.

2. RUTA *hortenſis minor tenuifolia. Mor. Hiſt.* The leſſer Garden-rue, with narrow Leaves.

3. RUTA *hortenſis minor tenuifolia. foliis variegatis argenteis. Boerh. Ind.* The leſſer Garden-rue, with narrow Leaves, variegated with White.

4. RUTA *Chalepenſis latifolia, florum petalis villis ſcatentibus. H. L.* The broad-leav'd *Aleppo* Rue, whoſe Flower-leaves are beſet with Down.

5. RUTA *Chalepenſis tenuifolia, florum petalis villis ſcatentibus. Mor. Hiſt.* Narrow-leav'd *Aleppo* Rue, whoſe Flower-leaves are beſet with Down.

6. RUTA *ſylveſtris major. C. B. P.* Greater wild Rue.

7. RUTA *ſylveſtris minor. C. B. P.* Smaller wild Rue.

8. RUTA *ſylveſtris linifolia Hiſpanica. Bocc. Muſ. Spaniſh* wild Rue, with a Flax leaf.

The firſt Sort here mention'd is that which the College of Phyſicians have directed to be uſed in Medicine, and is the moſt commonly cultivated in *England*.

The ſecond Sort is propagated but in few Gardens in *England*; tho' the third, which is a Variety of the ſecond, and only differing from it in having its Leaves variegated with White, is very commmon in *England*, being greatly cultivated by thoſe Gardeners who ſupply the *London* Markets with Plants in the Spring-ſeaſon; at which time this Plant makes a beautiful Appearance: but as the Seaſon advances, and the Plants increaſe in Vigour, the Variegation of the Leaves goes off, and they appear almoſt green; but their Colour returns in Winter.

The two Sorts of *Aleppo* Rue are only preſerv'd in ſome curious Gardens, being rarely uſed in Medicine; though of late Years the broad-leav'd Sort was become ſo plenty, as to be brought to the Markets inſtead of the firſt Sort: but being much ranker, and of a more offenſive Smell, it was neglected.

The greater wild Rue is leſs common in *England* than either of the former. This I raiſed from Seeds, which were ſent me by my honoured Friend Mr. *Henry Hopkey*, from *Gibraltar*, where this Plant grows upon the Hills in great Plenty.

The ſmaller wild Rue is alſo uncommon: the Leaves of this Sort are ſmall, and neatly ſet on the Branches, ſo as to make a very pretty Appearance; but this, and the former Sorts, are tender; ſo are frequently deſtroy'd by Cold in the Winter. Theſe two Sorts produced plenty of Seeds in the Phyſic-garden at *Chelſea*, which ſeemed very perfect; but not one of them came up when ſown.

The eighth Sort is alſo tender, and

comes from the ſame Country; therefore theſe three ſhould be planted in Pots, and ſhelter'd in Winter from ſevere Froſt; but they muſt have free Air in mild Weather.

All theſe Plants may be propagated either by ſowing of their Seeds, or by planting Slips or Cuttings; both of which muſt be done in the Spring. The manner of propagating them from Cuttings being the ſame with Roſmary, *&c.* I ſhall not repeat it here, but refer the Reader to that Article; and if they are propagated by Seeds, there needs no farther Care but to dig a Bed of freſh Earth in the Spring, making it level; then to ſow the Seeds thereon, and rake the Ground ſmooth: after which you muſt obſerve to keep the Bed clear from Weeds until the Plants are come up about two Inches high; when they ſhould be tranſplanted out into freſh Beds, where they may remain for Uſe. All theſe Plants muſt have a dry Soil, otherwiſe they are very ſubject to be deſtroy'd in Winter. The two *Aleppo* Rues, and the wild Rue, are ſomewhat tenderer than the common Sort; but theſe will endure our ordinary Winters very well in the open Air, eſpecially if they are planted on a dry Soil.

The firſt Sort was formerly uſed to plant for Edgings on the Sides of Borders; it was then called *Herb of Grace*; but was by no means proper for this Uſe; for the Plants ſhoot ſo vigorouſly, that there is no keeping them within the Bounds of an Edging; beſides, when they are kept cloſely ſhear'd, they appear very ragged and ſtumpy; and their Roots ſpread ſo far, as to exhauſt the Goodneſs of the Soil, ſo that the other Plants would be depriv'd of their Nouriſhment; which Reaſons have caus'd them to be wholly neglected for this Purpoſe; ſo that at preſent they are chiefly cultivated for medicinal Uſe, or to furniſh the Balconies for the Citizens in the Spring.

RUTA CANINA. *Vide* Scrophularia.

RUTA MURARIA, Wall-rue, or White Maiden-hair.

This Plant is found growing out of the Joints of old Walls in divers Parts of *England*, where it is gather'd for medicinal Uſe; but as it cannot be cultivated in Gardens, ſo as to grow to Advantage, I ſhall not ſay any thing more of it in this Place.

RUYSCHIANA.

The *Characters* are;

It hath a labiated Flower conſiſting of one Leaf, whoſe Upper-lip (or Creſt) is divided into two Parts; but the Beard is cut into three Segments, the middle Segment being divided into two Parts, and is twiſted like a Screw: out of the Empalement ariſes the Pointal, fixed like a Nail in the hinder Part of the Flower, attended by four Embryoes; which afterward become ſo many Seeds incloſed in the Empalement.

We have but one *Species* of this Plant; which is,

RUYSCHIANA *flore cæruleo magno. Boerh. Ind. alt.* Ruyſchiana with a large blue Flower.

This Name was given to this Plant by the learned Dr. *Boerhaave*, Profeſſor of Botany at *Leyden*, in Honour to Dr. *Ruyſch*, who was Profeſſor of Anatomy and Botany at *Amſterdam*. It was by ſome Writers in Botany ranged among the Hyſſops; by others it was made a Ground-pine; and by ſome a Self-heal; to neither of which it exactly agreed: which occaſion'd Dr. *Boerhaave* to conſtitute a new Genus of it by this Name.

This is a perennial Plant, which dies to the Root in Autumn, and riſes again the following Spring. It commonly grows about two Feet high, and has long narrow Leaves, ſomewhat reſembling thoſe of Roſmary; on the Tops of the Stalk, the Flowers are produced in a cloſe thick Spike, growing in Whorles round the Stalk; which are of a fine blue Colour, and make a very pretty Appearance during their Continuance in Beauty; which in a cool Seaſon is ſometimes ſix Weeks, beginning in *May*, and laſting till *July*.

It is propagated by Seed, which ſhould be ſown in the Middle of *March*, in a Bed of freſh light Earth, in an open Expoſure; and in about five Weeks after the Plants will appear, when they ſhould be carefully cleared from Weeds; and if the Seaſon ſhould prove dry, they muſt be refreſhed now-and-then with Water, which will greatly promote their Growth. When the Plants are about two Inches high, they ſhould be carefully tranſplanted into a Bed or Border of freſh light undunged Earth, obſerving to ſhade them from the Sun until they have taken Root; as alſo to refreſh them frequently with Water, until they are well eſtabliſh'd in this Bed; after which time they will require no farther Care, but to keep them conſtantly clear from Weeds, till *Michaelmas*, when they are to be removed into the Places where they are deſigned to remain for good.

When the Plants are firſt tranſplanted from the Seed-bed into a Nurſery-bed, they ſhould be planted about ſix Inches aſunder every Way, which will be ſufficient room for them the firſt Seaſon; and this will admit of the Hoe to come between the Plants to deſtroy the Weeds, which is by much a better Method than the pulling them out by Hand, and is much ſooner perform'd.

At *Michaelmas*, when the Plants are tranſplanted for good, they ſhould be carefully taken up with Balls of Earth to their Roots; and they muſt be planted in the Middle of the Borders in freſh light Earth, intermixing them with other hardy Plants of the ſame Growth; where they will make a pretty Appearance, when they are in Flower, and will continue three or four Years; and in ſome poor ſtony Soils I have known the Roots live ſix or ſeven Years; but theſe did not produce ſo large Spikes of Flowers, as thoſe younger and more vigorous Plants.

It will be proper to have ſome of the Plants in Pots, which, in caſe of a ſevere Winter, may be ſhelter'd under a Frame, for fear thoſe Plants which are expos'd ſhould be deſtroyed; and theſe Plants in Pots, if they are duly ſupply'd with Water in dry Weather, will flower very ſtrong; wherefore they may be placed among other Plants, to decorate Courts, &c. where they will have a good Effect.

But as theſe Plants do not continue many Years, it will be proper to raiſe a Supply of young Plants to ſucceed them; for the old Plants will produce Seeds plentifully, which are ripe in *Auguſt*, when they ſhould be gather'd in dry Weather, and kept in a warm dry Room, till the time for ſowing them.

S A

SABINA, The Savine-tree.

The *Characters* are;

It hath compact, rigid, and prickly ever-green Leaves: the Fruit is *ſmall, ſpherical, and warted; and the whole Plant has a very rank ſtrong Smell.*

The *Species* are;

1. Sabina *folio tamariſci Dioſcoridis. C. B. P.* The Male or common Savine.

2. Sabina *folio cupreſſi. C. B. P.* The berry-bearing, or upright Savine.

3. Sabina *folio variegato.* The ſtriped Savine.

Theſe Plants are commonly cultivated for medicinal Uſe, and are rarely planted in Gardens for Pleaſure, becauſe their ill Scent renders them diſagreeable in frequented Places; but yet they may be admitted for planting in Clumps, or to form Amphitheatres of ever-green Trees; where, if theſe are intermix'd among other low growing Plants, they will add to the Variety.

Theſe Plants may be propagated by laying down their young Branches in the Spring; which, if duly watered in dry Weather, will take Root in a Year's time, and may then be tranſplanted out either into a Nurſery, or the Places where they are to remain: they may alſo be propagated by Cuttings, which ſhould be planted on a moiſt Soil about the Beginning of *October*; which, if duly water'd in dry Weather, will take Root, and the Autumn following may be removed, as was directed for the Layers.

The time for tranſplanting theſe Plants is the ſame with Laurels, Laurus Tinus, *&c.* obſerving to do it in moiſt Weather, laying a little Mulch upon the Surface of the Ground about their Roots, to prevent their drying: after they are rooted, they will require no farther Care but to keep them clear from Weeds, and to dig the Ground about their Roots every Spring, which will greatly promote their Growth.

Theſe Plants are uſually ranged with the Junipers; to which Genus they properly belong by their Characters; but as they have been long known by the Title of Savine in the Shops, I have continued this Name to them.

The firſt Sort ſeldom produces Berries in this Country, nor in many other Places; which has occaſion'd many Perſons to give it the Epithet of Male, and to the upright Sort that of Female, from its bearing plenty of Berries; and from hence ſome have ſuppoſed them to be but one Species; but they are certainly two diſtinct Plants; for they totally differ in the manner of their Growth, as alſo in their Leaves. I have ſometimes found Berries on the firſt Sort; but theſe are produc'd ſparingly, and never but on old Plants.

The firſt ſeldom riſes above three or four Feet high; the Branches ſpread horizontally to a great Diſtance from the Stem; ſo theſe Plants are very proper to plant for covering of Rocks, or to hang over Water, where the dark Green of the Leaves will have a very good Effect; and being extremely hardy, is another Recommendation: for in the ſevere Froſt in the Year 1739-40. when there were few Plants eſcap'd, theſe retain'd their Verdure, and were not injur'd.

The other Sort grows more erect, and will riſe to the Height of ten or twelve Feet. The Leaves of this reſemble thoſe of the *Virginian* Cedar, and have the ſame rank Scent as the common Savine; but this is not common in *England* at preſent: however, it deſerves to be propagated, as it makes a Variety among other ever-green Shrubs.

SAFFRON. *Vide* Crocus.

SAGE. *Vide* Salvia.

SALICARIA, Willow-wort, or Spiked Looſe-ſtrife.

The *Characters* are;

The Flowers conſiſt of ſeveral Leaves, which are placed circularly, and expand in form of a Roſe: theſe Leaves are produced from the Inciſures of the Flower-cup: from the Centre of the Flower-cup riſes the Pointal, which afterward becomes a Fruit, or oval Huſk, conſiſting of two Cells, and generally full of ſmall Seeds, which adhere to the Placenta, *and are commonly wrapped up in the Flower-cup.*

The *Species* are;

1. Salicaria *vulgaris purpurea, foliis oblongis. Tourn.* Purple ſpiked Willow-herb, or Looſe-ſtrife, with long Leaves.
2. Salicaria *purpurea, foliis ſubrotundis. Tourn.* Purple ſpiked Willow-herb, or Looſe-ſtrife, with roundiſh Leaves.
3. Salicaria *hyſſopi folio latiore. Inſt. R. H.* Broad hyſſop-leav'd Willow-wort, or Hedge-hyſſop.
4. Salicaria *hyſſopi folio anguſtiore. Inſt. R. H.* Narrow hyſſop-leav'd Willow-wort, or Graſs poly.
5. Salicaria *Luſitanica, anguſtiore folio. Inſt. R. H. Portugal* Willow-wort, with a narrow Leaf.
6. Salicaria *Hiſpanica, hyſſopi folio, floribus oblongis, ſaturate cæruleis. Inſt. R. H. Spaniſh* Willow-wort, with an Hyſſop-leaf, and oblong deep blue Flowers.
7. Salicaria *minima Luſitanica, nummulariæ folio. Inſt. R. H.* The leaſt *Portugal* Willow-wort, with a Moneywort-leaf.
8. Salicaria *Orientalis, ſalicis folio acutiſſimo & glabro. Tourn. Cor.* Eaſtern Willow-wort, with a ſharp-pointed ſmooth Willow-leaf.
9. Salicaria *Cretica, punicæ folio. Tourn. Cor. Candy* Willow-wort, with a Pomgranate-leaf.

The two Sorts firſt-mention'd are very common by the Sides of Ditches, and other moiſt Places, in divers Parts of *England*, and are rarely cultivated in Gardens: yet, for the Beauty of their long Spikes of purple Flowers, they deſerve a Place in a good Garden, as alſo for their long Continuance in Flower: however, if there happens to be a moiſt boggy Place in a Garden, where few other Plants will thrive, theſe may be placed there to Advantage, and will afford a great deal of Pleaſure. They propagate themſelves very faſt by their creeping Roots; and if they delight in the Soil, will in a ſhort time multiply exceedingly. Theſe produce their Flowers in *June* and *July*, and often continue till *Auguſt* in Beauty.

The two next Sorts are found wild in *England*, on moiſt Soils, where the Water ſtands in Winter; but they are pretty rare near *London*. Theſe are ſeldom preſerved in Gardens, but are here mentioned to introduce the next Sort, which is a very beautiful Plant, and deſerves a Place in every curious Garden, for its long Continuance in Flower. This Sort is a Native of *Portugal*; but is a tolerable hardy Plant, and will endure the Cold of our ordinary Winters in the open Air; but in very ſevere Froſt, is ſometimes deſtroyed; ſo that ſome Plants of this Kind may be planted in Pots, which may be ſhelter'd under a common Frame in Winter, where they ſhould have as much free Air as poſſible in mild Weather; for they only require to be protected from very hard Froſts. In Summer they may be placed abroad with other flowering Plants; but in dry Weather they muſt be daily watered, otherwiſe they will not flower ſtrong, nor continue ſo long in Beauty. Theſe Flowers are produced from the Wings of the Leaves, beginning at the Bottom of the Stalks near the Root, and are continued all the Way up to the Top of the Stalks, which are about two Feet in Length; for this Sort ſeldom riſes any higher: the Flowers are pretty large, and of a bright purple Colour. This Plant begins to flower the Beginning of *June*, and continues till *Auguſt*.

As this Sort very rarely produces ripe Seeds in *England*, it muſt be propagated by parting of the Roots, or by laying down the Branches, which will take Root in a few Months (provided they are conſtantly watered in dry Weather); and may then be taken from the old Plants, and planted into Pots, that they may be ſhelter'd in Winter; and the Spring following, ſome of them may be ſhaken out of the Pots, and planted into a Border, where they may have the morning Sun; and in dry Weather, if they are watered conſtantly, they will flower very well, and make a fine Appearance.

The ſixth Sort is alſo a very beautiful Plant, and well deſerves a Place in every good Garden. This grows about the ſame Height with the former; ſo may be interſpers'd with it in the Borders of the Flower-garden; as may alſo the ſeventh and eighth Sorts, for Variety, tho' they are not near ſo beautiful as either of the former Sorts. Theſe may be treated in the ſame manner as hath been directed for the fifth Sort; with which Management they will thrive very well.

The eighth Sort grows much taller than either of the other; ſo ſhould be plac'd amongſt larger Plants. This is very hardy, and may be propagated either by Seeds, or by parting of the Roots, which is the ſureſt way; becauſe the Seeds do not ripen every Year in this Climate. The beſt time to part the Roots is in Autumn, that they may be well fixed in the Ground before the Spring; becauſe thoſe which are parted in the Spring, ſeldom flower very ſtrong, eſpecially if the Seaſon proves dry. This Sort may be intermix'd with the two large Kinds firſt-mention'd, and will grow in almoſt any Situation, provided they are watered in dry Weather.

SALICORNIA, Jointed Glaſſwort, or Saltwort.

The *Characters* are;

It hath an apetalous Flower, wanting the Empalement; for the Stamina *(or Chives), and the Embryoes, grow on the extreme Part of the Leaves: theſe Embryoes afterward become Pods or Bladders, which for the moſt part contain one Seed.*

The *Species* are;

1. Salicornia *geniculata ſempervirens. Tourn. Cor.* Jointed evergreen Glaſſwort.
2. Salicornia *geniculata annua. Tourn. Cor.* Annual Jointed Glaſſwort.

Theſe Plants grow on the Sea-coaſt in many Parts of *Europe*, and upon the Shores in ſeveral Places in *England*, which are waſhed every Tide with the Salt-water; but are rarely planted in Gardens, becauſe it is very difficult to make them grow in any other Situation, than in Salt-marſhes, and on the Shores, where the Salt-water frequently flows. Of theſe Plants there ſeem to be two or three Varieties, which appear remarkably different; but are not ſuppoſed to be diſtinct Species.

The Inhabitants near the Sea-coaſt, where theſe Plants grow, cut them up toward the Latter-end of Summer, when they are fully grown; and after having dried them in the Sun, they burn them for their Aſhes, which are uſed in making of Glaſs and Soap. Theſe Herbs are, by the Country-people, call'd Kelp; and are promiſcuouſly gather'd for Uſe.

From the Aſhes of theſe Plants is extracted the Salt, called *Sal Kali*, or *Alkali*, which is much uſed by the Chemiſts.

The manner of gathering and burning of theſe Herbs is already mention'd under the Article of *Kali*; ſo I ſhall not repeat it in this Place.

In ſome Parts of *England* theſe Herbs are gather'd and pickled for Samphire, though it is very different from either of theſe.

SALIX, The Sallow, or Willow-tree.

The *Characters* are;

It hath amentaceous Flowers, conſiſting of ſeveral Stamina, *which are collected into a Spike, but are barren: the Embryoes are produced upon different Trees from the Male Flowers, and afterward become a Fruit or Huſk, ſhaped like a Cone, opening in two Parts, and containing downy Seeds.*

The *Species* are;

1. Salix *vulgaris alba arboreſcens. C. B. P.* The common white Willow.
2. Salix *folio laureo, ſeu lato glabro odorato. Phyt. Brit.* The bay-leav'd ſweet Willow.
3. Salix *folio longo utrinque virente odorato.* The long-leav'd ſweet Willow.
4. Salix *folio longo latoque ſplendente, fragilis. Raii Syn.* The Crack Willow.
5. Salix *folio amygdalino, utrinque aurito, corticem abjiciens. Raii Syn.* The almond-leav'd Willow, that caſts its Bark.
6. Salix *folio auriculato ſplendente, flexilis. Cat. Cant.* The round-ear'd ſhining Willow.
7. Salix *folio longo ſubluteo, non auriculato, viminibus luteis. Raii Syn.* The long-leav'd yellowiſh Willow.
8. Salix *latifolia rotunda. C. B. P.* Round-leav'd Sallow.
9. Salix *latifolia rotunda variegata.* The ſtriped Sallow.
10. Salix *latifolia, folio ſplen- Raii Syn.* Broad ſhining-leav'd Sallow.
11. Salix *Orientalis, flagellis deorſum pulchre pendentibus. T. Cor.* The weeping Willow.
12. Salix *caprea, acuto longoque folio. Raii Syn.* Mountain Willow, with a long-pointed Leaf.
13. Salix *minime fragilis, foliis longiſſimis utrinque viridibus non ſerratis. Raii Syn.* Smooth long green-leav'd Willow.
14. Salix *folio longiſſimo. Cat. Cant.* The Oſier.
15. Salix *humilior, foliis anguſtis ſubcæruleis ex adverſo binis. Raii Syn.* The yellow dwarf Willow.
16. Salix *Alpina, alni rotundo folio, repens. Bocc. Muſ.* Mountain creeping Willow, with a round Alder-leaf.

There are a greater Number of Species to be found in *England* than are here mention'd, eſpecially of the Sallows, as I have been informed by a very judicious Baſket-maker: there are at leaſt thirty Sorts, which they diſtinguiſh by Name, commonly in Uſe in their Trade; and beſides theſe, there are a great Number of mountain Willows, which grow upon dry Grounds, and are cultivated as Under-wood, in many Parts of *England*.

The firſt Sort here mention'd is the common white Willow, which grows to the largeſt Size of all the Sorts. The Shoots of this are brittle, ſo are not fit for the Baſket-makers or Gardeners; but the Wood of this Tree was much eſteem'd by the Shoemakers for Heels of Shoes, being a light ſmooth Wood: ſo that this Sort is only proper for ſuch Plantations as are deſigned to grow tall, either for Shade or Shelter; therefore is generally planted in low marſhy Lands, for that Purpoſe.

The ſecond Sort ſhoots very ſtrong, but is not inclinable to grow to a large Size; ſo is chiefly planted for the Uſe of Baſket-makers; the Twigs of this being pliable. The Leaves of this are as large as thoſe of the Bay-tree, and have an agreeable Scent; for which Reaſon many People plant this in the low wet Parts of Plantations, where better Things will not thrive.

The third Sort hath alſo an agreeable Scent; ſo is by many preſerved in their Gardens and Plantations. The Twigs of this are pliable, which renders them fit for the Baſket-makers and Gardeners.

The fourth Sort is brittle, ſo unfit for Uſe. This grows to be a large Tree; therefore may be planted for Shade and Shelter.

The fifth, ſixth, ſeventh, thirteenth, fourteenth, and fifteenth Sorts have pliable Twigs; ſo are planted in the Oſier-grounds for the Basket-makers; but the thirteenth Sort is eſteem'd the beſt. The Twigs of this may be twiſted about like Thread, being exceeding tough and pliable; therefore theſe are the beſt Sort for the Gardeners Uſe, and particularly for faſtening of Fruit-trees to the Eſpalier; ſo that where there is Room and Conveniency, a few of theſe ſhould be planted, becauſe they are very uſeful in a Garden.

The eleventh Sort is not a Native of this Country; but has been introduc'd of late Years from the *Levant*, where it is a Native. The Branches of this Sort are very ſlender, and always hang downward; which occaſion'd this Title of weeping Willow. This is very proper to plant at the Termination of Water, where the Head is deſign'd to be hid, and the Sight deceiv'd, by the Water being loſt under the Boughs of the Willow.

The eighth, ninth, and twelfth Sorts are frequently planted in Coppices, for Underwood; and are often cut for Hoops, as alſo for makeing Hurdle-fences about Fields. Theſe Sorts grow upon dry chalky Lands, where few other Kinds will thrive.

The ninth Sort is only a Variety of the eighth, having variegated Leaves, which in the Spring make a pretty Appearance; ſo is preſerv'd in the Gardens of thoſe who are curious in having Plants with variegated Leaves.

The ſixteenth Sort is of very humble Growth, ſeldom riſing to be one Foot high. The Roots of this Kind creep in the Ground; ſo it propagates very faſt in a cold moiſt Situation. This grows plentifully in the mountainous Parts of *Wales* and *Cumberland*, as alſo upon the *Alps*; and I have alſo received it from *Davis's Streights*; ſo that I believe it is common in moſt cold Countries: but it is difficult to get this to thrive in the South; for where ſome curious Perſons have procur'd Plants of it from the Places of its Growth, they have not been able to keep it many Years; for it delights to grow upon Moors and Swamps, where the Soil is of a peaty Nature. But as this Plant is of no Uſe or Beauty, it is rarely preſerved in Gardens.

There are ſeveral of the Sorts which are planted in the Oſier-grounds, and always kept low, that when they are not cut down, and have room to grow, will riſe to a conſiderable Height, and become large Trees: ſo that they may be planted for the ſame Purpoſes as the firſt Sort, and will make a Variety when intermix'd with it; though they are commonly cultivated for their Twigs, which are annually cut, and produce good Profit to the Owner of the Land.

All the Sorts of Willows may be eaſily propagated by planting Cuttings or Sets in the Spring, which readily take Root, and are of quick Growth. Thoſe Sorts which grow to be large Trees, and are cultivated for their Timber, are generally planted from Sets, which are about ſeven or eight Feet long: theſe are ſharpen'd at their larger End, and thruſt into the Ground by the Sides of Ditches and Banks, where the Ground is moiſt; in which Places they make a conſiderable Progroſs, and are a great Improvement to ſuch Eſtates; becauſe their Tops will be fit to lop every fifth or ſixth Year. The larger Wood, if ſound, is commonly ſold for making wooden Heels or Soles for Shoes; as alſo to the Turners, for many Kinds of light Ware.

The Sallows are commonly planted in Cuttings made from ſtrong Shoots of the former Year, and are about three Feet long: theſe are commonly thruſt down two Feet deep into the Ground, and are one Foot above it. The Soil ſhould always be dug or plow'd before they are planted, and the Cuttings plac'd about three Feet Row from Row, and eighteen Inches aſunder in the Rows; obſerving always to place the Rows the ſloping Way of the Ground (ſpecially if the Tides overflow the Place); becauſe if the Rows are plac'd the contrary Ways, all the Filth and Weeds will be detain'd by the Plants, which will choak them up.

The beſt Seaſon for planting theſe Cuttings is in *February*; for if they are planted ſooner, they are apt to peel, if it proves hard Froſt; which greatly injures them. Theſe Plants are always cut every Year; and if the Soil be good, they will produce a great Crop; ſo that the yearly Produce of one Acre has been often ſold for fifteen Pounds; but ten Pounds is a common Price, which is much better than Corn-land; ſo that it is great Pity theſe Plants are not more cultivated, eſpecially upon moiſt boggy Soils, upon which few other Things will thrive.

SALVIA, Sage.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, whoſe Upper-lip is ſometimes arched, and ſometimes hooked; but the Under-lip, or Beard, is divided into three Parts, bunching out, and not hollowed, as the Clary: out of the Flower-cup riſes the Pointal, attended, as it were, by four Embryoes, which afterward become ſo many Seeds, which are roundiſh, ſhut up in an Huſk, which was before the Flower-cup: to which may be added, That the Stamina *ſomewhat reſemble the* Os Hyoidis.

The *Species* are;

1. Salvia *major, an Sphacelus Theophraſti. C. B. P.* The greater or common Sage.

2. Salvia *nigra. C. B. P.* Common red Sage.

3. Salvia *major, foliis ex viridi & albo variegatis. Boerh. Ind.* The greater Sage, with Leaves variegated with White and Green.

4. Salvia *foliis verſicoloribus. C. B. P.* Party-colour'd Sage.

5. Salvia *latifolia ſerrata. C. B. P.* The Broad-leav'd notch'd Sage.

6. SALVIA *latifolia ſerrata, foliis ex albo variegatis.* Broad-leav'd Sage, with variegated Leaves.

7. SALVIA *abſinthium redolens. J. B.* Wormwood Sage.

8. SALVIA *minor aurita, & non aurita. C. B. P.* Sage of Virtue.

9. SALVIA *minor, foliis variegatis. H. R. Par.* Sage of Virtue, with ſtriped Leaves.

10. SALVIA *Orientalis latifolia abſinthium redolens, flore carneo magno. Boerh.* Broad-leav'd Eaſtern Sage, ſmelling like Wormwood, with a large fleſh-colour'd Flower.

11. SALVIA *Orientalis latifolia hirſutiſſima viſcoſa pinnata, flore & calyce purpureis, inodora. Boerh. Ind.* Eaſtern Sage, with broad hairy clammy wing'd Leaves, with a purple Flower and Flower-cup, without Smell.

12. SALVIA *Africana fruteſcens, folio ſcorodoniæ, flore violaceo. H. A.* Shrubby *African* Sage, with a Wood-ſage-leaf, and a violet-colour'd Flower.

13. SALVIA *Africana fruteſcens, folio ſubrotundo glauco, flore aureo magno. H. A.* Shrubby *African* Sage, with roundiſh ſea-green Leaves, and a large golden Flower.

14. SALVIA *Orientalis abſinthium redolens, foliis pinnatis, flore carneo, elatior. Sher.* Eaſtern upright Wormwood Sage, with wing'd Leaves, and a fleſh-colour'd Flower.

15. SALVIA *Hiſpanica, folio lavendulæ. Tourn.* *Spaniſh* Sage, with a Lavender-leaf.

There are ſeveral other Species, or at leaſt Varieties, of this Plant, which are preſerved in ſome curious Botanic Gardens abroad; but thoſe here mentioned are what I have obſerved in the *Engliſh* Gardens.

The firſt Sort, tho' the moſt common in many Parts of *Europe*, yet is but rarely to be ſeen in the *Engliſh* Gardens; but the red Sort is moſt commonly cultivated in this Country, which many Perſons ſuppoſe to be only a Variety of the common Sort; but it conſtantly preſerves its Difference when raiſed from Seeds, as I have two or three times experimented; ſo that I don't ſcruple to make it a diſtinct Species, ſince its Difference from the common is much greater than in ſome of the other Sorts of Sage, particularly the Sage of Virtue, and the Lavender-leav'd Sage; both which, when cultivated in a good Soil, are ſo nearly alike, as not to be diſtinguiſh'd by the beſt Botaniſts. This red Sage, the Wormwood Sage, and Sage of Virtue, are the principal Sorts cultivated for Uſe in *England*; tho' the Broad-leav'd Sage is much preferable to the Sage of Virtue for Tea, it giving the Water a much more grateful Flavour, and is eſteemed to be of a leſs drying Quality; ſo that moſt Perſons, who are Lovers of Sage-tea, prefer this for that Purpoſe.

All the Sorts of Sage, except the eleventh Sort, which is but annual, may be propagated by planting Cuttings or Slips, during any of the Summer-months, obſerving to water and ſhade them until they have taken Root; after which they may be taken up, and planted where they are deſigned to remain, which ſhould always be upon a dry Soil, and where they may have the Benefit of the Sun; for if they are planted on a moiſt Soil, or in a ſhady Situation, they are very ſubject to be deſtroyed in Winter; nor will theſe Plants endure the Cold ſo well, when planted upon a rich Soil, as thoſe which have a barren, dry, rocky Soil, which is the Caſe of moſt of the verticillate Plants. The Side-ſhoots and Tops of theſe Plants may be gathered in the Summer, and dried, if deſigned for Tea;

otherwiſe they are beſt taken green from the Plants for moſt other Uſes.

The twelfth, thirteenth, and fourteenth Sorts are ſomewhat tender; therefore theſe muſt be planted into Pots filled with freſh light ſandy Earth; and in Winter muſt be removed into the Conſervatory, where they ſhould be placed as near the Windows as poſſible, that they may have a great Share of freſh Air whenever the Seaſon is mild; for if they are too much drawn, they ſeldom flower well, and make but an indifferent Appearance: in Summer they muſt be expoſed amongſt other Exotic Plants in ſome well-ſheltered Situation; for they are pretty hardy, and only require to be ſheltered from the Froſt, and ſtrong Winds. Theſe Plants muſt be often refreſhed with Water, eſpecially in warm Weather, otherwiſe they will ſhrivel and decay; and they ſhould be tranſplanted at leaſt twice every Summer, becauſe their Roots will greatly increaſe; which, if confin'd in the Pots too long, will turn mouldy, and decay. The other Oriental Sorts are hardy enough to endure the Cold of our ordinary Winters in the open Air, provided they are planted in a dry Soil, and a warm Situation.

Theſe Plants may alſo be propagated by ſowing their Seeds in the Spring upon a Bed of freſh Earth, obſerving to keep the Ground clear from Weeds until the Plants are come up; when they ſhould be tranſplanted into Beds of freſh Earth, and treated as thoſe raiſed from Cuttings or Slips.

SALVIA AGRESTIS. *Vide* Scordium.

SAMBUCUS, The Elder-tree.

The *Characters* are;

The Branches are full of Pith, having but little Wood: the Flowers are monopetalous, divided into ſeveral Segments, and expand in form of a Roſe: theſe are, for the moſt part, collected into an Umbel, and are ſucceeded by ſoft ſucculent Berries, having three Seeds in each.

The *Species* are;

1. Sambucus *fructu in umbella nigro. C. B. P.* Common Elder, with black Berries.

2. Sambucus *fructu in umbella viridi. C. B. P.* Common Elder, with greeniſh Berries.

3. Sambucus *fructu albo. Lob.* The white-berried Elder.

4. Sambucus *racemoſa rubra. C. B. P.* The mountain red-berried Elder.

5. Sambucus *laciniato folio. C. B. P.* The Cut or Parſley-leav'd Elder.

6. Sambucus *vulgaris, foliis ex luteo variegatis.* The blotch'd-leav'd Elder.

7. Sambucus *humilis, ſive Ebulus. C. B. P.* Dwarf Elder, or Danewort.

The firſt of theſe Trees is very common in the Hedges in moſt Parts of *England*; but the ſecond and third Sorts are more rare: theſe are propagated for the ſake of their Berries, which are by ſome Perſons uſed for making Wine, and for other Purpoſes. The fourth Sort is leſs common in *England* than either of the former, it being only to be found in ſome curious Gardens at preſent. The fifth and ſixth Sorts are preſerv'd for the Variety of their Leaves, by ſuch as are curious in collecting the various Kinds of Trees and Shrubs.

All theſe Sorts may be eaſily propagated from Cuttings, or by ſowing their Seeds; but the former, being the moſt expeditious Method, is generally practiſed. The Time for planting of their Cuttings is from *September* to *March*; in the doing of which, there needs no more Care than to thruſt the Cuttings about ſix or eight Inches into the Ground, and they will take Root faſt enough, and may afterward be tranſplanted where they are to remain, which may be upon almoſt any Soil or Situation: they are extreme hardy; and if their Seeds are permitted to fall upon the Ground, they will produce Plenty of Plants the ſucceeding Summer.

Theſe Trees are often planted for making Fences, becauſe of their quick Growth; but as their Bottoms become naked in a few Years, they are not ſo proper for that Uſe: neither would I recommend them to be planted near Habitations; becauſe at the Seaſon when they are in Flower, they emit ſuch a ſtrong Scent, as will occaſion violent Pains in the Heads of thoſe who abide long near them: beſides, the crude Parts which are continually perſpired thro' their Leaves, are accounted unwholſome; tho' the Leaves, Bark, and other Parts, are greatly eſteemed for many Uſes in Medicine.

The Dwarf Elder is found wild in ſome Counties of *England*; but near *London* it is propagated in Gardens for medicinal Uſe; tho' very often the Herb-women in the Markets give the tender Shoots of the Elder-tree inſtead of this, to ſuch Perſons as can't diſtinguiſh them aſunder.

This Plant multiplies exceeding faſt by its creeping Root, which, if permitted to run, will ſoon overſpread a large Spot of Ground: the Off-ſets of theſe Roots may be tranſplanted any time from *September* to *March*, and will grow in any Soil or Situation; but ſhould be allowed room to ſpread; for if they are planted near other Plants, they will overrun and deſtroy them.

SAMOLUS, Round-leav'd Water Pimpernel.

The *Characters* are;

It hath a wheel-ſhaped Flower, conſiſting of one Leaf, which is cut into ſeveral Segments: the Pointal ariſes from the Empalement, and is fixed like a Nail in the Centre of the Flower; which, uniting with the Empalement, is turn'd into a Fruit or Pod, opening at the Top, and incloſing many ſmall Seeds.

We know but one *Species* of this Plant; which is,

Samolus *Valerandi. J. B.* Round-leav'd Water-pimpernel.

This Plant grows wild in ſwampy Places, where the Water uſually ſtands in Winter; and is ſeldom preſerved in Gardens: it is an annual Plant, which flowers in *June*, and the Seeds are ripe in *Auguſt*; at which time, whoever hath a mind to cultivate this Plant, ſhould ſow the Seeds on a moiſt Soil, where the Plants will come up, and require no farther Care, but to keep them clear from Weeds.

SANGUINARIA, Puccoon.

The *Characters* are;

The Flower is incloſed in a Sheath, compoſed of two oval concave Leaves, which fall off: the Flower hath eight oblong Petals, which are alternately narrow: theſe ſpread open; and in the Centre is ſituated the Pointal, attended by ſeveral ſhort Stamina: *the Pointal afterward becomes an oblong ſwelling Pod, opening both ways, and including many round-pointed Seeds.*

We have but one *Species* of this Plant; *viz.*

Sanguinaria *minor, flore ſimplici. Hort. Elth.* The ſmall Puccoon, with a ſingle Flower.

There are ſome other Varieties of this Plant mentioned in the *Eltham* Garden; but they are not diſtinct Species, for they vary annually; therefore it is to no purpoſe to mention their Variations.

This Plant was formerly ranged in the Genus of *Celandine*, by the

Title of *Chelidonium maximum Canadenſe acaulon*; and this Name of *Sanguinaria* was applied to it by Dr. *Dillenius*, who was Profeſſor of Botany at *Oxford*. We have no proper *Engliſh* Name for this; but as the Inhabitants of *America* call it by the *Indian* Name Puccoon, I have continued it here.

It is a Native of moſt of the Northern Parts of *America*, where it grows plentifully in the Woods; and in the Spring, before the Leaves of the Trees come out, the Surface of the Ground is in many Places covered with the Flowers, which have ſome Reſemblance of our Wood Anemone; but they have ſhort naked Pedicles, each ſupporting one Flower at the Top: ſome of theſe Flowers will have ten or twelve Petals; ſo that they appear to have a double Range of Leaves, which has occaſioned their being termed double Flowers: but this is only accidental, the ſame Roots, in different Years, producing different Flowers: the Roots of this Plant are tuberous, and the whole Plant has a yellow Juice, which the *Indians* uſe to paint themſelves.

This Plant is hardy enough to live in the open Air in *England*; but it ſhould be planted in a looſe Soil, and a ſheltered Situation, but not too much expoſed to the Sun: it is propagated by the Roots, which may be taken up and parted every other Year: the beſt time for doing of this is in *September*, that the Roots may have time to ſend out Fibres before the hard Froſt ſets in. The Flowers of this Plant appear in *April*; and when they decay, the green Leaves come out, which will continue till *Midſummer*; then they decay, and the Roots remain unactive till the following Autumn: ſo that unleſs the Roots are marked, it will be pretty difficult to find them, after their Leaves decay; for they are of a dirty-brown Colour on the Outſide; ſo are not eaſily diſtinguiſhed from the Earth.

This Plant is very proper to mix with the Dogs-tooth Violet, Spring Cyclamen, *Perſian* Iris, Bulbocodium, Siſyrinchium, and ſome other low-growing bulbous and tuberous-rooted Flowers, which require the ſame Culture; where theſe will add to the Variety when they are in Beauty: for when the Roots are ſtrong, and grow in a good Soil, they will produce a great Number of Flowers upon each Root: the Roots may be planted about four or five Inches aſunder every Way.

SANGUISORBA, Burnet, called by the *French* Pimpernel.

The *Characters* are;

The Empalement of the Flower conſiſts of two Leaves, which fall away: the Flower is of one Leaf, divided into four Parts, which are joined at the Bottom: the quadrangular Pointal, which is ſituated in the Centre, becomes a ſmall Capſule, opening both Ways, and incloſing ſmall Seeds.

The *Species* are;

1. SANGUISORBA *minor*. *C. B. P.* Common Burnet, or Pimpernel.
2. SANGUISORBA *major pratenſis*. *Rupp. Flor.* Great Meadow Burnet.
3. SANGUISORBA *Canadenſis, flore albo ſpicato*. *Rupp. Flor.* *Canada* Burnet, with a white ſpiked Flower.
4. SANGUISORBA *major, foliis auriculatis glabris*. Great Burnet, with ſmooth-ear'd Leaves.
5. SANGUISORBA *hirſuta, agrimoniæ foliis*. Hairy Burnet, with Leaves like Agrimony.
6. SANGUISORBA *ſpinoſa, caule fruticoſo*. Prickly Burnet, with a woody Stalk.
7. SANGUISORBA *major Hiſpanica, conglomerato flore*. Great *Spaniſh* Burnet,

Burnet, with Flowers growing in a cloſe Head.

8. Sanguisorba *minor, ſemine majore & craſſiore.* Small Burnet, with a larger and thicker Seed.

This Genus of Plants has been by ſome old Writers titled *Sanguiſorba*, by others *Pimpinella*; and by ſome both Titles have been applied to it: but Dr. *Linnæus* has divided the Species of this Genus, to ſome of which he applies this Name of *Sanguiſorba*, and to the others *Poterium*: the firſt Genus he places in his Claſs of *Tetrandria*, as they have but four *Stamina* in their Flowers: the other he places in his Claſs of *Monoecia Polyandria*, theſe having Male and Female Flowers in the ſame Spike; and the Flowers have many *Stamina*: ſo, by his Method, theſe two *Genera* are ſeparated to a great Diſtance: but as theſe Species have been always brought under one Genus before his time, I chooſe to continue them together.

The firſt Sort grows wild in many Parts of *England*, particularly upon chalky Land, where it grows ſo ſmall, as to appear different from what it does when tranſplanted into Gardens. This is the Sort which is directed by the College for medicinal Uſe; and it has been uſed as a cooling Herb in Drinks; but of late Years the People cultivate it for Sallads: the young Leaves in the Spring, being mixed with other ſmall Herbs in Sallads, give a very agreeable Flavour to them.

The ſecond Sort alſo grows wild in moiſt Meadows, in ſome Parts of *England*. The third Sort was brought from the Northern Parts of *America*. The fourth Sort is a Native of the Mountains in *Savoy*. The ſeventh Sort grows wild in *Spain* and *Portugal*; and the eighth Sort in *Iſtria* and *Dalmatia*; from whence I received the Seeds, which were procured for me by my much honoured Friend the Chevalier *Rathgeb*. Theſe are all of them hardy perennial Plants, which will eaſily riſe from the Seeds, if they are ſown on a Bed of common Earth in the Spring; and when the Plants are fit to remove, they ſhould be tranſplanted into Beds: the ſmall Sorts may be planted one Foot aſunder, and the large Sorts two Feet: theſe Roots will abide ſeveral Years, and produce plenty of Seeds.

The fifth Sort ſeldom laſts longer than two Years; ſo that when the Plants have perfected their Seeds, they ſoon after periſh: therefore whoever is willing to preſerve this Species, ſhould annually ſow ſome of the Seeds: this is hardy, and may be propagated in the ſame manner as the former Sort.

The ſixth Sort grows with woody Stalks about three Feet high, which continue ſeveral Years; and ſends out many irregular Branches, which are furniſhed with Spines toward their Extremities: this Sort is not ſo hardy as the former; ſo ſhould be preſerved in Pots, and ſheltered from ſevere Froſt in Winter; otherwiſe the Plants will be deſtroyed: it may be propagated by Seeds, as the former Sorts, or by Cuttings, which may be planted any time in Summer: and if they are duly watered and ſhaded, they will ſoon take Root; and may afterward be planted into Pots.

SANGUIS DRACONIS. *Vide* Palma.

SANICULA, Sanicle.

The *Characters* are;

It is an umbelliferous Plant, whoſe Flower conſiſts of five Leaves placed orbicularly; but are generally bent back to the Centre of the Flower, reſting on the Empalement, which be-

comes a Fruit compos'd of two Seeds, that are gibbous and prickly on one Side, but plain on the other: ſome of the Flowers are always barren.

There is but one *Species* of this Plant at preſent in *England*; *viz.*

Sanicula *officinarum. C. B. P.* Sanicle, or Self-heal.

This Plant is found wild in Woods, and ſhady Places, in moſt Parts of *England*; but being a medicinal Plant, may be propagated in Gardens for Uſe: it may be increaſed by parting of the Roots, any time from *September* to *March*; but it is beſt to do it in Autumn, that the Plants may be well rooted before the dry Weather in Spring comes on: they ſhould have a moiſt Soil, and a ſhady Situation, in which they will thrive exceedingly.

SANTOLINA, Lavender-cotton.

The *Characters* are;

It hath a globoſe floſculous Flower, conſiſting of many Florets, divided into ſeveral Segments, ſitting on the Embryo, contained in the intermediate little Leaves, hollowed like a Gutter, and a ſquamous hemiſpherical Empalement: the Embryo afterward becomes a Seed, not at all furniſhed with Down: to theſe Notes muſt be added, Larger Flowers than thoſe of Wormwood and Southernwood, and alſo the whole Face of the Plant.

The *Species* are;

1. Santolina *foliis teretibus. Tourn.* Common Lavender-cotton.

2. Santolina *flore majore, foliis villoſis & incanis. Tourn.* Lavender-cotton, with a larger Flower, and hoary Leaves.

3. Santolina *foliis erycæ vel ſabinæ. Tourn.* Green-leav'd Lavender-cotton, with a Scent like Ointment.

4. Santolina *foliis cupreſſi. Tourn.* Cypreſs-leav'd Lavender-cotton.

5. Santolina *repens & caneſcens. Tourn.* Creeeping and hoary Lavender-cotton.

6. Santolina *foliis minus incanis. Tourn.* Lavender-cotton with leſs hoary Leaves.

7. Santolina *foliis obſcure virentibus, flore aureo. Tourn.* Lavender-cotton with dark-green Leaves, and a golden Flower.

8. Santolina *foliis roriſmarini, major. Tourn.* Greater Lavender-cotton, with Roſmary-leaves.

9. Santolina *vermiculata Cretica. Tourn.* Vermiculated Lavender-cotton of *Candy*.

The firſt of theſe Plants is cultivated in Gardens for medicinal Uſe; as is the third, for furniſhing Balconies, and other little Places in and near the City, by way of Ornament; but the other Sorts are rarely to be found, but in the Gardens of thoſe who are curious in Botanical Studies.

Moſt of theſe Plants may be cultivated ſo as to become Ornaments to a Garden, particularly in ſmall Boſquets of ever-green Shrubs; where, if theſe are artfully intermix'd with other Plants of the ſame Growth, and placed in the front Line, they will make an agreeable Variety; eſpecially if care be taken to trim them twice in a Summer, to keep them within Bounds; otherwiſe their Branches are apt to ſtraggle, and, in wet Weather, to be borne down, and diſplaced, which renders them unſightly; but when they are kept in Order, their hoary and different-colour'd Leaves will have a pretty Effect in ſuch Plantations.

Theſe Plants may be propagated by planting Slips or Cuttings of any of the Kinds during the Spring, which ſhould be put into a Border of freſh light Earth, and water'd and ſhaded in hot dry Weather, until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds till Autumn, when they ſhould be carefully taken up, and tranſplanted where they are deſigned to remain: but if the Ground is not ready by that time to receive them, it will be proper to let them remain in the Border until Spring; for if they are tranſplanted late in Autumn, they are liable to be deſtroyed by a little Cold in Winter.

Theſe Plants are very hardy, and if planted in a lean, gravelly, or ſandy dry Soil, will continue many Years, and reſiſt the Cold very well: but if they are in a wet or rich Soil, they are often deſtroyed in Winter.

SAPINDUS, The Soapberry.

The *Characters* are;

It hath a Flower, which, for the moſt part, is compoſed of four Leaves expanding in form of a Roſe: from whoſe four-leav'd Empalement ariſes the Pointal, which afterward becomes a ſpherical Fruit, having a thick oily Cover, incloſing a Nut of the ſame Form.

We have but one *Species* of this Plant; which is,

Sapindus *foliis coſtæ alatæ innaſcentibus. Inſt. R. H.* The Soapberry, or Soap-apple-tree.

This Tree is very common in *Jamaica*, *Barbados*, and moſt other Places in the *Weſt-Indies*, where it riſes to the Height of thirty Feet, or more; but in *Europe* it is preſerv'd by thoſe Perſons who are curious in cultivating Exotic Plants, for the ſingular Structure of the Leaves, which are very long and narrow, having Borders on each Side, which, at about every two Inches, have *Pinnæ*, or Wings, oppoſite to each other, and terminated by an odd one. The Flowers are produc'd at the Ends of the Branches, which are ſmall and white, growing in Cluſters. Theſe are ſucceeded by ſpherical brown Berries, about the Size of Cherries, which have very little Pulp; but a brown Skin covering the Nut, which is round, black, and hard. Theſe Nuts were formerly brought into *England* to make Buttons; for which Purpoſe they were very proper, becauſe they never crack. The Skin which ſurrounds the Nut, will lather like Soap, and is uſed in *America* to waſh Linen; though many People ſay it will burn it, when it is often uſed.

This Plant is propagated by Seeds (which muſt be obtain'd from the Countries where they naturally grow; for they do not produce Fruit in *Europe*): theſe muſt be put into ſmall Pots filled with freſh rich Earth, and plunged into an Hot-bed of Tanners Bark. The Pots muſt be frequently watered, otherwiſe the Berries, whoſe outer Cover is very hard, will not vegetate. In a Month or five Weeks the Plants will begin to appear, when the Glaſſes of the Hot-bed ſhould be raiſed every Day in warm Weather, to admit freſh Air to the Plants. In three Weeks or a Month after the Plants appear, they will be fit to tranſplant; when they muſt be ſhaken out of the Pots, and carefully parted, ſo as not to injure their Roots, and each planted into a ſeparate ſmall Pot filled with light rich Earth, and then plunged into the Hot-bed again; obſerving to ſhade them from the Sun every Day, until they have taken new Root; after which time, they muſt have free Air admitted to them every Day, when the Weather is warm; and will require to be frequently watered.

After the Plants are well rooted, they will make great Progreſs, ſo as to fill theſe Pots with their Roots in a few Weeks time; therefore they muſt then be ſhifted into larger Pots; and as the Plants advance, they ſhould be inured to bear the open Air by degrees; for if they are forc'd too much in Summer, they ſeldom live through the Winter. I have frequently rais'd theſe Plants from Seeds, to the Height of two Feet in one Summer; and the Leaves of theſe Plants have been a Foot and an half in Length, ſo that they made a fine Appearance: but theſe Plants did not ſurvive the Winter; whereas thoſe which were expos'd to the open Air in *July*, and thereby ſtinted in their Growth, continued their Leaves freſh all the Winter. Theſe were plac'd in a Stove upon Shelves, where the Warmth was very moderate; with which theſe Plants will thrive better than in a greater Heat.

SAPONARIA. *Vide* Lychnis.

SAPOTA, The Mammee Sapota.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of ſeveral Leaves, which are placed in a circular Order; from whoſe Empalement ariſes the Pointal, which afterward becomes a large oval ſoft fleſhy Fruit, incloſing an oblong pointed Stone or Fruit, which is finely poliſhed, having a rough Fiſſure on one of the Edges, of an Aſh-colour.

The *Species* are;

1. Sapota *fructu turbinato minori. Plum. Nov. Gen.* Sapota with a leſſer Fruit, ſhaped like a Top.

2. Sapota *fructu ovato majori. Plum. Nov. Gen.* Sapota with a larger oval Fruit.

The Name of *Sapota* is what theſe Fruit are call'd by the Natives of *America*; to which ſome add the Appellation of Mammee: but there is no other Name given to theſe Fruits by the *Engliſh*, ſince they have ſettled in the *Weſt-Indies*, ſo far as I can learn.

The firſt of theſe Trees is common about *Panama*, and ſome other Places in the *Spaniſh Weſt-Indies*; but is not to be found in any of the *Engliſh* Settlements in *America*. The ſecond Sort is very common in *Jamaica*, *Barbados*, and moſt of the Iſlands in the *Weſt-Indies*, where the Trees are planted in Gardens for their Fruit, which is by many Perſons greatly eſteemed.

Theſe Trees grow in *America* to the Height of thirty five or forty Feet, having a ſtrait Trunk, covered with an aſh-coloured Bark. The Branches are produc'd on every Side, ſo as to form a regular Head: theſe are beſet with Leaves, which are a Foot in Length, and near three Inches broad. The Flowers, which are produced from the Branches, are of a Cream-colour; when theſe fall away, they are ſucceeded by large oval or top ſhaped Fruit, which are covered with a browniſh Skin, under which is a thick Pulp of a Ruſſet-colour, very luſcious, call'd *Natural Marmelade*, from its Likeneſs to Marmelade of Quinces.

As theſe Trees are Natives of very warm Countries, they cannot be preſerv'd in *England*, unleſs they are plac'd in the warmeſt Stoves, and manag'd with great Care. They are propagated by planting the Stones; but as theſe will not keep good long out of the Ground, the ſureſt Method to obtain theſe Plants is, to have the Stones planted in Tubs of Earth, as ſoon as they are taken out of the Fruit, and the Tubs placed in a Situation where they may have the morning Sun, and kept duly water'd. When the Plants are come up, they muſt be ſecur'd from Vermin, and kept clear from Weeds; but ſhould remain in the Country till they are about a Foot high, when they may be ſhipp'd for *England:* but they ſhould be brought over in the Summer-ſeaſon, and, if poſſible, time enough for the Plants to make good Roots after they arrive. During their Paſſage, they muſt have ſome Water, while they continue in a warm Climate; but as they come into colder Weather, they ſhould have little Moiſture; and they muſt be ſecured from ſalt Water, which will ſoon deſtroy the Plants, if it gets at them

When theſe Plants arrive in *England*, they ſhould be carefully taken out of the Tubs, preſerving ſome Earth to their Roots, and planted into Pots filled with freſh Earth, and then plunged into a moderate Hot-bed of Tanners Bark; obſerving, if the Weather is hot, to ſhade the Glaſſes with Mats every Day, to ſcreen the Plants from the Sun, until they have taken new Root; obſerving alſo, not to water them too much at firſt, eſpecially if the Earth in which they come over is moiſt; becauſe too much Water is very injurious to the Plants before they are well rooted; but afterward they muſt have plenty of Water in warm Weather: and they muſt have a large Share of Air admitted to them; otherwiſe their Leaves will be infeſted with Inſects, and become foul; in which caſe they muſt be waſhed with a Spunge, to clean them; without which the Plants will not thrive.

In the Winter theſe Plants muſt be plac'd in the warmeſt Stove; and in cold Weather they ſhould have but little Water given to them, tho' they muſt be frequently refreſhed when the Earth is dry; eſpecially, if they retain their Leaves all the Winter, they will require a greater Share of Water, than when they drop their Leaves: ſo that this muſt be done with Diſcretion, according to the State in which the Plants are. As theſe Plants grow in Magnitude, they ſhould be ſhifted into Pots of a larger Size; but they muſt not be over-potted; for that will infallibly deſtroy them.

SARRACENA, The Side-ſaddle Flower.

The *Characters* are;

It hath a Flower conſiſting of ſeveral Leaves, which are placed circularly, and expand in form of a Roſe, and reſting in a many-leav'd Empalement: from the Middle ariſes the Pointal, which is membranaceous, and ſhaped like an Hood, and afterward becomes a roundiſh Fruit divided into five Cells, which contain oblong Seeds.

The *Species* are;

1. SARRACENA *Canadenſis, foliis cavis & auritis. Inſt. R. H.* Canada Sarracena, with hollow eared Leaves.

2. SARRACENA *foliis longioribus & anguſtioribus. Cateſb. Hiſt. Carol.* Long narrow-leav'd Sarracena.

Theſe ſtrange Plants are Natives of *New-England*, *Virginia*, and ſeveral Places in *North-America*, where they grow on Bogs, and in ſuch Places where the Waters uſually ſtand in Winter. The Leaves of the firſt Sort ariſe from the Root every Spring, being eight or nine in Number; which are ſmall at the Bottom, but ſwell larger toward the Top, and are hollow like a Pitcher; having a ſort of an Appendage at the Top, ſomewhat reſembling a Flap: ſo that in theſe Leaves there is commonly a large Quantity of Water contain'd. Theſe are ſeven or eight Inches in Length: between the Leaves ariſes the Flower-ſtem, which is naked; and each of theſe ſuſtains one purple Flower, growing on the Top, which is ſucceeded by a roundiſh Fruit.

The Leaves of the ſecond Sort grow near three Feet high; being ſmall at the Bottom, but widening gradually to the Top. Theſe are hollow, and are arched over at the Mouth like a Friar's Cowl. The Flowers of this grow on naked Pedicles, riſing from the Root to the Height of three Feet: theſe Flowers are green.

The Name was given to this Plant by Dr. *Tournefort*, in Honour of Dr. *Sarrazin*, a curious Botaniſt, who ſent the Plant from *Canady* to Dr. *Tournefort* at *Paris*.

As theſe Plants grow on Bogs, it is very difficult to cultivate them in *England*: for altho' the Winters are much more ſevere in the Places of their natural Growth, than they generally are in *England*; yet their Summers being much warmer, they thrive much better, and produce their Flowers and Fruit annually; whereas it is with great Difficulty they are kept alive for a Year or two in *England*; and they have not yet flower'd in this Country, as I could learn. By the Appearance of ſome Plants, which I receiv'd from *New-England*, which were taken up on the ſame Spot, the two Sorts grow promiſcuouſly; but whether they are only accidental Varieties, I cannot ſay.

The only Method to obtain theſe Plants is, to procure them from the Places of their Growth, and to have them taken up with large Balls of Earth to their Roots, and planted in Tubs of Earth; which muſt be conſtantly watered during their Paſſage, otherwiſe they will decay before they arrive; and there is little Probability of raiſing theſe Plants from Seeds: ſo that young Plants ſhould be taken up to bring over, which are more likely to ſtand here, than thoſe which have flower'd two or three times. When the Plants are brought over, they ſhould be planted into pretty large Pots; which ſhould be filled with ſoft ſpongy Earth, mixed with rotten Wood, Moſs, and Turf, which is very like the natural Soil in which they grow. Theſe Pots muſt be conſtantly ſupplied with Water, and placed in a ſhady Situation in Summer; but in the Winter they muſt be covered with Moſs, or ſhelter'd under a Frame, otherwiſe they will not live in this Country; tho' they have much more ſevere Froſt in the Countries where they naturally grow; but there they are covered with Snow, which may be a great Protection to them. With this Management I have kept ſome of theſe Plants alive two Years; but they made very little Progreſs.

SATUREIA, Savory.

The *Characters* are;

It is a Plant of the verticillate Kind, with a labiated Flower, whoſe upper Lip (or Creſt) is divided into two Parts; but the lower Lip (or Beard) is divided into three Parts, the middle Part being crenated: theſe Flowers are produc'd from the Wings of the Leaves, in a looſe Order, and not in Whorles or Spikes, as are moſt of this Tribe of Plants.

The *Species* are;

1. SATUREIA *ſativa*. *J. B.* Garden or Summer-ſavory.
2. SATUREIA *montana*. *C. B. P.* Winter-ſavory.
3. SATUREIA *Virginiana*. *Par. Bat.* *Virginian* Savory.

The firſt of theſe Plants is annual, and is propagated by ſowing the Seeds upon a Bed of freſh light Earth in *March*; and when the Plants are come up, they muſt be tranſplanted into other Beds, placeing them about four or five Inches aſunder each Way; obſerving to do this in moiſt cloudy Weather, becauſe at ſuch times the Plant will ſoon take Root: but if the Seaſon ſhould prove hot and dry, they muſt be diligently watered until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds; and in *July* they will flower; at which time they will be fit to cut for medicinal Uſe: but thoſe Plants which are left uncut will produce ripe Seeds in *September*, provided the Autumn be favourable.

The Winter-ſavory is an abiding Plant, and may be propagated by Slips or Cuttings; which, if planted in a Bed of freſh light Earth in the Spring, and carefully watered, will take Root in a ſhort time, and may then be tranſplanted where they are to remain. There ſeem to be two *Species* of this, differing in their manner of Growth, and alſo in the Size of their Flowers. This Plant ſhould have a dry Soil, in which it will endure the Cold very well, as may be ſeen by its growing in ſome Places upon the Tops of Walls, where it defies the ſevereſt Cold of our Climate.

Theſe Plants were antiently more cultivated in *England* than at preſent, they being very little in Uſe to what they were formerly, when they enter'd moſt Diſhes of Soups, *&c.* but at preſent they are very little uſed in the Kitchen, being chiefly cultivated for medicinal Uſe.

SATYRION. *Vide* Orchis.

SAVINE. *Vide* Sabina.

SAVORY. *Vide* Satureia.

SAURURUS, Lizards-tail

The *Characters* are;

It hath an apetalous Flower, conſiſting of two Chives, which open two ways, and are full of very ſmall Powder (or Farina*): the Embryo reſts between two Chives, which afterward becomes an oval Fruit, incloſing a ſingle Seed: to theſe Notes muſt be added, The Flowers and Fruit are fixed to one* Axis, *ſo as to reſemble the Tail of a Lizard.*

The *Species* are;

1. SAURURUS *racemoſus, ſeu botryites major. Plum. Nov. Gen.* Greater branching Lizards-tail.
2. SAURURUS *racemoſus, ſeu botryites minor. Plum. Nov. Gen.* Leſſer branching Lizards-tail.
3. SAURURUS *cauda adunca. Plum. Nov. Gen.* Lizards-tail with a crooked Tail.
4. SAURURUS *foliis plantagineis, cauda breviori. Plum. Nov. Gen.* Lizards-tail with Plantain-leaves, and a ſhorter Tail.
5. SAURURUS *botryites major, foliis plantagineis. Plum. Nov. Gen.* Greater cluſter'd Lizards-tail, with Plantain-leaves.
6. SAURURUS *foliis amplis rotundis & umbilicatis. Plum. Nov. Gen.* Lizards-tail with large round umbilicated Leaves.
7. SAURURUS *foliis amplis cordatis, non umbilicatis. Plum. Nov. Gen.* Lizards-tail with large heart-ſhaped Leaves, not umbilicated.
8. SAURURUS *procumbens minor botryites, folio carnoſo cordato. Plum. Nov. Gen.* Smaller creeping cluſter'd Lizards-tail, with a fleſhy heart-ſhap'd Leaf.
9. SAURURUS *alius humilis, folio carnoſo ſubrotundo. Plum. Nov. Gen.* Low Lizards-tail, with a roundiſh fleſhy Leaf.
10. SAURURUS *repens, folio orbiculari, nummulariæ facie. Plum. Nov. Gen.* Creeping Lizards-tail, with a round Leaf, having the Appearance of Moneywort.
11. SAURURUS *repens triphyllus, folio rotundo. Plum. Nov. Gen.* Creeping three-leav'd Lizards-tail, with a round Leaf.
12. SAURURUS *cauliculis maculoſis, repens. Plum. Nov. Gen.* Creep-

ing Lizards-tail, with a ſpotted Stalk.

13. Saururus *fruteſcens, lauro-ceraſi folio, fructu breviore & craſſiore. Houſt.* Shrubby Lizards-tail, with a Laurel-leaf, and a ſhorter and thicker Fruit.

14. Saururus *arboreſcens latifolia villoſa, fructu gracili. Houſt.* Tree-like Lizards-tail, with a broad hairy Leaf, and a ſlender Fruit.

The ſeven Sorts firſt-mention'd grow to be ſhrubby, and riſe to the Height of four or five Feet, having Leaves plac'd alternately on their Branches. The *Iulus* comes out from the Wings of the Leaves, which is ſhap'd like a Lizard's Tail; from whence they had their Names. By ſome they are called long Pepper, from the Reſemblance their *Iuli* bear to the long Pepper; but the Fruit of theſe are not uſed, nor have they the Taſte of Pepper. Theſe Sorts were diſcover'd to grow in *Jamaica*, by the late Dr. *Houſtoun*; and ſome of them are deſcribed by Sir *Hans Sloane*, in his Natural Hiſtory of that Iſland.

The eighth, ninth, and tenth Sorts are Plants of humbler Growth: theſe trail on the Ground, and emit Roots from their Joints, which faſten themſelves into the Earth where-ever it is looſe; by which Method they ſpread to a great Diſtance. The Leaves and Stalks of the ninth Sort are very thick and ſucculent, and remain always green.

The eleventh and twelfth Sorts are creeping Plants, which faſten themſelves to Trees; by which means they riſe to the Height of eight or ten Feet, faſten their Roots into the Bark of the Trees, and receive Part of their Nouriſhment from thence.

All theſe twelve Sorts were diſcover'd by Father *Plumier* in the *Weſt-Indies*, who has figur'd and deſcrib'd them in his Hiſtory of *American* Plants; but ſeven of them were before deſcrib'd by Sir *Hans Sloane*, in his Natural Hiſtory of *Jamaica*.

The two laſt Sorts were diſcovered by the late Dr. *Houſtoun* at *La Vera Cruz*, from whence he ſent Samples of them into *England*. Theſe two Sorts grow much larger than either of thoſe before-mention'd.

Some of theſe Plants are called, by the Inhabitants of *Jamaica*, Spaniſh Elder, from their being jointed, and their Branches having a great deal of Pith in them. Others of them, eſpecially thoſe which have Leaves ſhaped like an Heart, are call'd *Santa Maria* Leaves.

Theſe Plants moſt of them grow in moiſt ſhady Places, in the warmeſt Parts of *America*; where many of them root into the decayed Trunks of Trees, and rotten Wood (eſpecially thoſe which trail), and thereby they propagate faſter than by Seeds; for as they emit Roots at almoſt every Joint, each of theſe will make a ſeparate Plant.

But as theſe Plants are too tender to bear the open Air in this Climate, they muſt be preſerved in a Stove, where the Air may be kept in a moderate Temperature for Heat; and if they are placed in the Bark-bed, and their Branches permitted to trail on the Surface of the Bark, the Plants will ſend forth Roots at every Joint, and faſten themſelves ſtrongly into the Bark; ſo will thrive exceeding faſt, and produce their Flowers and Fruit.

The Seeds of theſe Plants, when brought from abroad, ſeldom ſucceed in *England*; ſo that the moſt proper Method to obtain the Plants is, to have ſome of their Cuttings planted into Boxes of Earth, in the Countries where they naturally grow; and when they are well rooted, they may be ſent over to *England*, with Directions given to the Perſons to whoſe Care they are intruſted, not to let them have too much Water (eſpecially when they come into a cool Climate); becauſe Moiſture then will be very prejudicial to them. They muſt alſo be carefully guarded againſt the Salt-water, which will infallibly deſtroy them, if it be ſuffered to come to them. When the Plants arrive in *England*, they ſhould be carefully taken out of the Boxes, and each planted into a ſeparate ſmall Pot filled with freſh light Earth, and then plunged into a moderate Hot-bed of Tanners Bark; obſerving to ſhade them from the Sun at firſt, until they have taken Root; after which time they ſhould have freſh Air admitted to them, in proportion to the Warmth of the Seaſon; but in Winter they muſt be kept pretty warm, otherwiſe they will not live in this Country.

The ſureſt Method to make theſe Plants thrive in *England* is, to plunge the Pots into the Bark in the Stove, and to ſuffer the Branches of the creeping Kinds to trail on the Surface of the Bed; where they will ſtrike Roots into the Tan, and will thrive exceedingly. Theſe Plants merit a Place in every Collection of Plants, for their remarkable Leaves, and the ſingular Structure of their Branches; as alſo for the Oddneſs of their Flowers and Fruit, which are, for the moſt part, produc'd from the Wings of the Leaves.

SAXIFRAGA, Saxifrage.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves placed orbicularly, which expand in form of a Roſe: out of whoſe multifid Flower-cup riſes the Pointal; which commonly ends in two Horns, and afterward turns, together with the Flower-cup, into a roundiſh Fruit, which has likewiſe two Horns, and two Cells, which are full of ſmall Seeds.

The *Species* are;

1. SAXIFRAGA *rotundifolia alba*. *C. B. P.* White round-leav'd Saxifrage.

2. SAXIFRAGA *rotundifolia alba, flore pleno. Boerh. Ind.* White round-leav'd Saxifrage, with a double Flower.

3. SAXIFRAGA *Alpina ericoides, flore cæruleo. Tourn.* Mountain heath-like Sengreen, with a blue Flower.

4. SAXIFRAGA *ſedi folio, flore albo, multiflora. Tourn.* Many-flower'd Saxifrage, with an Houſleek-leaf, and a white Flower, commonly called Pyramidal Sedum.

5. SAXIFRAGA *ſedi folio anguſtiore ſerrato. Tourn.* Saxifrage with a narrow ſerrated Houſleek-leaf.

6. SAXIFRAGA *ad folia bulbos gerens. C. B. P.* Saxifrage bearing Bulbs at the Wings of the Leaves.

7. SAXIFRAGA *verna annua humilior. Inſt. R. H.* Dwarf ſpring annual Saxifrage, commonly call'd Rue-leav'd Whitlow-graſs.

8. SAXIFRAGA *muſcoſa, trifido folio. Inſt. R. H.* Moſſy Saxifrage, with a trifid Leaf, commonly call'd Mountain Sengreen, or Ladies Cuſhion.

9. SAXIFRAGA *tridactylites Alpina, pallide lutea. Inſt. R. H.* Mountain Saxifrage, of a pale-yellow Colour, with a Leaf cut into three Segments.

10. SAXIFRAGA *tridactylites Alpina minor & villoſa. Inſt. R. H.* Small hairy Saxifrage of the *Alps*, with a Leaf cut into three Segments.

11. SAXIFRAGA *alba petræa Ponæ. Inſt. R. H.* White Rock Saxifrage.

12. SAXIFRAGA *ſedi folio, Pyrenaica*

naica ſerrata. Inſt. R. H. Pyrenean Saxifrage, with a ſawed Houſleek-leaf.

13. Saxifraga *foliis ſubrotundis ſerratis. Inſt. R. H.* Saxifrage with roundiſh ſawed Leaves.

14. Saxifraga *Alpina, ſedi foliis crenatis aſperis. Inſt. R. H.* Saxifrage of the *Alps*, with rough notched Leaves like Houſleek.

15. Saxifraga *foliis oblongo-rotundis dentatis, floribus compactis. Raii Syn. Ed.* 3. Saxifrage with an oblong-roundiſh indented Leaf, and the Flowers growing in cloſe Bunches.

16. Saxifraga *montana pyramidata, folio longiore. Inſt. R. H.* Mountain pyramidal Saxifrage, with a long Leaf.

17. Saxifraga *Pyrenaica lutea minima, ſedi foliis denſiſſime congeſtis. Inſt. R. H.* The leaſt yellow *Pyrenean* Saxifrage, with Houſleek-leaves growing very cloſe together.

18. Saxifraga *Alpina minima, foliis cæſiis, deorſum incurvis. Inſt. R. H.* The leaſt Saxifrage of the *Alps*, with ſky-colour'd Leaves, which bend downward.

19. Saxifraga *Alpina lutea, ſedi folio. Inſt. R. H.* Yellow Saxifrage of the *Alps*, with an Houſleek leaf.

20. Saxifraga *Pyrenaica tridactylites latifolia. Inſt. R. H.* Pyrenean Saxifrage, with broad Leaves cut into three Segments.

21. Saxifraga *Cantabrica latifolia tridactylites rigidior. Inſt. R. H.* Broad ſtiff-leav'd Saxifrage of *Biſcay*, with Leaves cut into three Segments.

22. Saxifraga *tridactylites Pyrenaica, pallide lutea, minima. Inſt. R. H.* The leaſt pale-yellow Saxifrage of the *Pyrenees*, with Leaves cut into three Segments.

23. Saxifraga *Pyrenaica, foliis partim integris, partim trifidis. Inſt. R. H.* Pyrenean Saxifrage, with Leaves partly intire, and partly cut into three Segments.

24. Saxifraga *Pyrenaica minima lutea, muſco ſimilis. Inſt. R. H.* The leaſt yellow Saxifrage of the *Pyrenean* Mountains, reſembling Moſs.

25. Saxifraga *annua Cretica minima, hederaceo folio. Tourn. Cor.* The leaſt annual Saxifrage of *Candia*, with an Ivy-leaf.

26. Saxifraga *Penſylvanica, floribus muſcoſis. Hort. Elth.* Saxifrage of *Penſylvania*, with greeniſh Flowers, growing branchy.

The firſt of theſe Plants is very common in moiſt Meadows in divers Parts of *England*, and is rarely cultivated in Gardens. This is what the College of Phyſicians have directed to be uſed in Medicine, under the Title of *White Saxifrage*, to diſtinguiſh it from *Meadow Saxifrage*; which is an umbelliferous Plant, of a very different Nature and Appearance from this.

The ſecond Sort is a Variety of the firſt, which was found wild by Mr. *Joſeph Blind*, Gardener at *Barns*, who tranſplanted it into his Garden, and afterward diſtributed it to ſeveral curious Perſons; ſince which time it hath been multiply'd ſo much, as to become a very common Plant in moſt Gardens near *London*; where it is commonly planted in Pots, to adorn Court-yards, *&c.* in the Spring.

This Plant is propagated by Offſets, which are ſent forth from the old Roots in great Plenty. The beſt Seaſon for tranſplanting them is in *July*, after their Leaves are decay'd; when they muſt be put into freſh undung'd Earth, and plac'd in the Shade until Autumn; but in Winter they muſt be expos'd to the Sun, which will cauſe them to flower ſomewhat earlier in the Spring. In *April* theſe Plants will flower; and if they are in large Tufts, will at that time make a very handſome Appearance; for which Reaſon moſt People ſuffer them to remain three or four Years unremov'd, and when they are tranſplanted, always plant them in Bunches, that they may produce a greater Number of Flowers. If theſe Plants are put into the full Ground, they muſt have a ſhady Situation; otherwiſe they will not thrive.

The third Sort is a low creeping Plant, which lies upon the Surface of the Ground, ſomewhat like Moſs: this grows wild in the Northern Counties of *England*; and is rarely cultivated in Gardens; tho' it deſerves a Place better than many other Plants, which are treated with great Care; for in the Month of *March* the whole Plant is covered with fine blue Flowers, which make a beautiful Appearance on the Surface of the Ground. This Sort multiplies very faſt, by its trailing Branches, which put out Roots at their Joints, and may be parted at *Michaelmas*, which is the proper Seaſon to remove the Plants. This Plant muſt have a ſhady Situation, and ſhould be duly watered in dry Weather; otherwiſe it will not thrive.

The fourth Sort is propagated for the ſake of its ſpecious Flowers: this is brought from the *Alps*, and *Pyrenean* Mountains, where it grows wild. It is uſually planted in Pots filled with freſh light Earth, and in the Summer-ſeaſon placed in the Shade; but in the Winter it ſhould be expoſed to the Sun; and all the Off-ſets ſhould be taken off, leaving the Plant ſingle, which will cauſe it to produce a much ſtronger Stem for flowering: for when there are Off-ſets about the old Plant, they exhauſt the Nouriſhment from it, whereby it is rendered much weaker. Theſe Off-ſets muſt be each planted in a ſeparate Halfpeny Pot filled with freſh Earth, in order to ſucceed the older Plants, which generally periſh after flowering: theſe Off-ſets will produce Flowers the ſecond Year; ſo that there ſhould be annually ſome of them planted, to ſucceed the others. When theſe Plants are ſtrong and healthy, they will produce a Stem of Flowers full three Feet high, which divides into Branches in a pyramidal Order, and are beſet with Flowers from Bottom to Top, ſo as to make a beautiful Figure: and as it uſually flowers in *June*, it is commonly placed in Chimneys of Halls, where it will continue in Flower a long time, provided it have Water duly given it; and will afford an agreeable Proſpect.

The fifth Sort is alſo a Native of the *Alps*, but will grow very well in Gardens: and tho' the Flowers are not very beautiful; yet, for the Variety of its ſerrated ever-green Leaves, it may have a Place in every good Garden. This may be propagated by Off-ſets, and requires the ſame Management as the former.

The ſixth Sort is a Variety of the common white Saxifrage, from which it differs in bearing ſmall Bulbs at the Leaves. This is not common in *England*; but is found wild on the *Pyrenean* Mountains, and in other moiſt Places in *Spain* and *Italy*; and propagates very faſt by the Bulbs; which grow on the Stalks in the ſame manner as the firy Lily.

The ſeventh Sort is a low annual Plant, which uſually grows on the Tops of Walls, and on dry rubbiſhy Places, and flowers in *April*. This Plant has been eſteemed a very good Remedy for the King's-evil, and other ſcrophulous Diſorders. Mr. *Boyle*, in his Treatiſe concerning the Uſefulneſs of Natural Philoſophy, has recommended this Herb to be infuſed in ſmall Beer, and drank for ſome Days; which he ſays will cure the King's-evil, without any ſenſible Evacuation, by conſuming the Humour, mitigating the Pain, diſcuſſing the Tumours, and drying up the Ulcers. The Time for gathering of this Herb to dry, is in the Middle of *April*, when it is in Flower; for it ſoon after perfects its Seeds, and dies away.

The eighth Sort grows wild in ſeveral Parts of *Yorkſhire*, and other cold Countries. This ſpreads on the Surface of the Ground, and forms itſelf into a roundiſh Tuft, which is exceeding cloſe and ſoft, and has the Appearance of Moſs at a ſmall Diſtance; from whence ſome of the Country-people give it the Name of Lady's Cuſhion. This Sort may be propagated in Plenty by its trailing Shoots; which, if they reſt on the Ground, will put out Roots, and multiply exceedingly. It loves a moiſt ſhady Situation.

The ninth, tenth, eleventh, ſeventeenth, twenty-ſecond, and twenty-third Sorts are alſo ſmall Plants, which lie cloſe to the Ground, ſomewhat like the eighth Sort; by which means they propagate themſelves plentifully: they are all hardy Plants, being Natives of the *Alps*'s *Pyrenees*, and other mountainous Places: they require to be planted in a moiſt Soil, and a ſhady Situation; for if they are too much expoſed to the Sun, they will not thrive; nor will they continue long, if they are planted on a rich Soil.

As theſe Plants do not produce very beautiful Flowers, they are ſeldom regarded; and are rarely planted in Gardens, unleſs by ſome Perſons who are curious in Botany, for the ſake of Variety. But yet theſe Plants may be introduced to plant about Rock-work, or between the Joints of ruſtic Buildings, where, if they are in the Shade, they will thrive very well, and have a very good Effect to the Sight: for theſe will ſucceed, where Moſs cannot be planted; and having ſo much the Appearance of Moſs, will be by moſt People taken for it at a ſmall Diſtance: and as theſe continue green throughout the Year, they will much better anſwer the Purpoſe.

The twelfth, thirteenth, fourteenth, fifteenth, and nineteenth Sorts have broader Leaves, and appear very much like ſome Sorts of Houſleeks. Theſe are very hardy Plants, being Natives of Northern Countries; therefore they muſt be planted in a ſhady Situation, and a poor Soil; but they will grow on drier Places than the former Sorts. Theſe Plants are eaſily propagated by Off-ſets, which they ſend out in great Plenty, and may be adapted to the ſame Purpoſes as the former, to adorn Rock-work, *&c.* and will make a pretty Diverſity.

The twenty-fifth Sort is an annual Plant, which was found by Dr. *Tournefort* in the Iſland of *Crete*, and is by ſome preſerv'd for the ſake of Variety; but there is no great Beauty in it.

The twenty-ſixth Sort was brought from *Penſylvania* to Mr. *Peter Collinſon*; who hath diſtributed it to ſeveral Perſons who are curious in preſerving rare Plants. This Sort hath long Leaves, which ſpread on the Surface of the Ground; from between which ariſe the Flower-ſtems, which grow about two Feet high, and branch toward the Top, bearing Cluſters of ſmall greeniſh Flowers. This is propagated by parting of the Roots, and ſhould be planted in a ſhady Situation; where, if it is duly water'd in dry Weather, it will thrive and flower every Year plentifully; and may be allowed a Place in a ſhady Border, for Variety-ſake.

SCABIOSA, Scabious.

The *Characters* are;

It hath a floſculous Flower, conſiſting of many unequal Florets, contained in a common Empalement: ſome of theſe, which occupy the Middle, are cut into four or five Segments; the reſt, which are placed at the Edge, are bilabiated: each of theſe ſit on the Top of an Embryo, which is crowned; and is contained in a proper Empalement, which afterward becomes a Capſule, either ſimple, or funnel-ſhaped, pregnant with a Seed crown'd, which before was the Embryo.

The *Species* are;

1. SCABIOSA *pratenſis hirſuta, quæ officinarum. C. B. P.* Common Field Scabious.

2. SCABIOSA *integrifolia glabra, radice præmorſa. H. L.* Whole-leav'd Scabious, or Devil's-bit.

3. SCABIOSA *ſtellata, folio non diſſecto. C. B. P.* Starred Scabious, with an undivided Leaf.

4. SCABIOSA *ſtellata, folio laciniato, major. C. B. P.* Greater ſtarred Scabious, with a cut Leaf.

5. SCABIOSA *peregrina rubra, capitulo oblongo. C. B. P.* Red *Indian* Scabious, with longiſh Heads, commonly called Muſk Scabious.

6. SCABIOSA *peregrina, capitulo oblongo, flore carneo. H. R. Par. Indian* or Muſk Scabious, with longiſh Heads, and a fleſh-colour'd Flower.

7. SCABIOSA *peregrina, capitulo oblongo, flore atro-purpureo. H. R. Par. Indian* or Muſk Scabious, with longiſh Heads, and a dark-purple Flower.

8. SCABIOSA, *peregrina, capitulo oblongo, flore variegato. H. R. Par. Indian* or Muſk Scabious, with oblong Heads, and a variegated Flower.

9. SCABIOSA *Indica prolifera. H. Edinb. Indian* childing Scabious.

10. SCABIOSA *Africana fruteſcens. Par. Bat. It. African* ſhrubby Scabious.

11. SCABIOSA *Africana fruteſcens, folio rigido ſplendente ſerrato, flore albicante. H. A. African* ſhrubby Scabious, with a ſtiff ſhining ſerrated Leaf, and a whitiſh Flower.

12. SCABIOSA *Alpina, folio centaurii majoris. C. B. P. Alpine* Scabious, with a greater Centaury-leaf.

13. SCABIOSA *fruticans latifolia alba C. B. P.* White broad-leav'd ſhrubby Scabious.

14. SCABIOSA *fruticans latifolia, floribus ad cæruleum inclinantibus. C. B. P.* Broad-leav'd ſhrubby Scabious, with Flowers inclining to blue.

15. SCABIOSA *fruteſcens anguſtifolia alba. C. B. P.* White narrow-leav'd ſhrubby Scabious.

16. SCABIOSA *multifido folio, flore flaveſcente. C. B. P.* Scabious with a variouſly-divided Leaf, and a yellowiſh Flower.

17. SCABIOSA *montana glabra, folio ſcabioſæ vulgaris. C. B. P.* Mountain ſmooth-leav'd Scabious.

18. SCABIOSA *montana latifolia non laciniata, rubra & prima. C. B. P.* The firſt red broad-leav'd mountain Scabious, not jagged.

19. SCABIOSA *latifolia rubra non laciniata, ſecunda. C. B. P* The ſecond red broad-leav'd Scabious, not jagged.

20. SCABIOSA *argentea anguſtifolia. C. B. P.* Narrow ſilver-leav'd Scabious.

21. SCABIOSA *Sicula fruticans, laureolæ folio, ſubtus incano. Inſt. R. H.* Shrubby *Sicilian* Scabious, with a Spurge-laurel-leaf, hoary underneath.

22. SCABIOSA *fruteſcens, foliis*

leucoii hortenſis. Hort. Cath. Shrubby Scabious, with Stockgilly-flower-leaves.

23. SCABIOSA *Cretica fruteſcens, auriculæ urſi folio. Tourn. Cor.* Shrubby *Candy* Scabious, with a Bear's-ear-leaf.

24. SCABIOSA *fruteſcens, foliis infra integris, flore cæruleo. Boerh. Ind.* Shrubby Scabious, with the lower Leaves intire, and a blue Flower.

25. SCABIOSA *perennis Sicula, flore ſulphureo. Boerh. Ind.* Perennial *Sicilian* Scabious, with a brimſtone-colour'd Flower.

26. SCABIOSA *ſtellata fruteſcens, leucoii folio minori, una alterave crena inciſo. Flor. Bat.* Shrubby ſtarry-ſeeded Scabious, with a ſmaller Stockgillyflower-leaf.

27. SCABIOSA *Africana fruteſcens maxima, foliis rugoſis & crenatis, minor. Par. Bat.* Greateſt ſhrubby *African* Scabious, with rough and leſs notched Leaves.

28. SCABIOSA *Africana fruteſcens maxima, foliis tenuiſſime inciſis. Boerh. Ind. alt.* Greateſt ſhrubby *African* Scabious, with Leaves very finely jagged.

29. SCABIOSA *altiſſima annua, foliis agrimoniæ nonnihil ſimilibus. H. L.* The talleſt annual Scabious, with Leaves ſomething like that of Agrimony.

30. SCABIOSA *fraxinellæ foliis. Inſt. R. H.* Scabious with white Dittany-leaves.

31. SCABIOSA *virgæ paſtoris folio. C. B. P.* Scabious with a leſſer Teaſel-leaf.

32. SCABIOSA *Luſitanica, Indicæ ſimilis. Inſt. R. H. Portugal* Scabious, like the *Indian* one.

33. SCABIOSA *ſtellata Hiſpanica, ampliſſimo folio. Inſt. R. H. Spaniſh* ſtarred Scabious, with a very large Leaf.

34. SCABIOSA *ſtellata annua prolifera. H. Par.* Annual proliferous ſtarred Scabious.

35. SCABIOSA *Orientalis ſtellata, foliis variis, flore carneo, ſemifloſculis florum fimbriatis.* Eaſtern ſtarred Scabious, with variable Leaves, and a fleſh-colour'd Flower, whoſe Half-florets are fringed.

The firſt Sort here mentioned grows wild in divers Parts of *England*, upon arable Land; as doth the ſecond in Woods, and ſhady Places, almoſt every-where. The firſt of theſe is what the College of Phyſicians have directed to be uſed, under the Title of Scabious; tho' the People who ſupply the Markets generally bring the ſecond Sort inſtead thereof; but it may be eaſily known therefrom by its hairy divided Leaves. The ſecond Sort the College have directed to be uſed under the Title of *Devils-bit*; which Name it received from the lower Part of its Root being commonly eaten off.

Both theſe Plants are very common in the Fields and Woods; but may be propagated in Gardens, by ſowing their Seeds in the Spring upon a Bed of freſh Earth; and when the Plants are come up, they muſt be tranſplanted into other Beds of freſh Earth, at about eight or ten Inches Diſtance; obſerving to water them until they have taken Root; after which time they will require no farther Culture, but to keep them clear from Weeds; and the ſecond Summer they will flower, and produce Seeds: but their Roots will abide many Years, and may be parted to propagate the Species.

The third Sort will grow to the Height of four or five Feet, and have a woody Trunk: this is preſerved in Green-houſes in Winter, by ſuch as are curious in foreign

Plants. It may be propagated by planting Slips or Cuttings in Pots of freſh Earth, during any of the Summer-months; which, if placed in a moderate Hot-bed, watered and ſhaded, will take Root in a ſhort time; after which they may be inured to the open Air by degrees, into which they ſhould be removed to continue abroad until *October*, when they muſt be carried into Shelter; but muſt have as much free Air as poſſible in mild Weather; for they only require to be protected from hard Froſt, and frequently watered. This Plant produces Flowers moſt Part of the Year, for which it is chiefly preſerved; tho' the Flowers have not more Beauty nor Scent than the common Field-ſort.

The fourth Sort is an annual Plant, which is preſerved in the Gardens of the Curious; but the Flowers of this are very like thoſe of the former Sort, and have no Scent.

The *Indian* or Muſk Scabious's are preſerv'd for the Beauty and ſweet Scent of their Flowers, which continue a long time. Theſe are propagated by ſowing of their Seeds; the beſt time for which is about the Latter-end of *May*, or the Beginning of *June*, that the Plants may get Strength before Winter; for if they are ſown too early in the Spring, they will flower the Autumn following; and the Winter coming on ſoon, will prevent their ripening Seeds: beſides, there will be fewer Flowers upon thoſe, than if they had remained ſtrong Plants thro' the Winter, and had ſent forth their Flower-ſtems in Spring; for theſe will branch out on every Side, and produce a prodigious Number of Flowers, and continue a Succeſſion of them on the ſame Plants from *June* to *September*, and produce good Seeds in Plenty.

The Seeds of theſe Plants ſhould be ſown upon a ſhady Border of freſh Earth (for if they are ſown upon a Place too much expoſed to the Sun, and the Seaſon ſhould prove dry, few of them will grow). When the Plants are come up, they may be tranſplanted into other Beds or Borders of freſh Earth, obſerving to water and ſhade them until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds till *Michaelmas*, when they may be tranſplanted into the Middle of the Borders in the Pleaſure-garden; where the ſeveral Sorts being intermix'd, will make an agreeable Variety.

They are extremely hardy, being rarely injur'd by Cold, unleſs they have ſhot up to flower before Winter; but ſeldom continue after ripening their Seeds.

The two *African* Tree Scabious's are abiding Plants, which are preſerved in Pots, and houſed in Winter, as the third Sort: theſe may be propagated by Slips or Cuttings, as the third, and require the ſame Management.

The twelfth Sort is preſerved by ſuch as are curious in collecting Varieties of Plants; but the Flowers have no Scent: however, as it is a hardy Plant, requiring no other Culture than the common Field Sort, it may be admitted, for Diverſity, into the Pleaſure-garden; becauſe it will thrive in ſhady Places, where few other Plants will grow.

The thirteenth, fourteenth, fifteenth, ſixteenth, ſeventeenth, eighteenth, nineteenth, twentieth, twenty-fourth, twenty-fifth, thirtieth, and thirty-firſt Sorts are all of them abiding Plants, which are hardy enough to live in the open Air in

England; ſo may be managed as hath been directed for the common Sorts of Scabious.

The twenty-firſt, twenty-ſecond, twenty-third, and twenty-ſixth Sorts, are alſo abiding Plants; but are ſomewhat tenderer than thoſe before-mention'd: ſo ſome Plants of each Kind ſhould be kept in Pots, that they may be ſhelter'd in Winter under a common Hot-bed-frame; and the others muſt be planted in warm Borders, otherwiſe they will not live thro' the Winters in this Country: and if the Soil in which theſe are planted, is poor and dry, they will grow ſtinted, and bear the Cold much better, than thoſe which are planted in a rich Soil, and grow freely. Thoſe Plants which are in Pots, and are placed in Shelter in Winter, muſt have as much free Air as poſſible in mild Weather; otherwiſe they will draw up weak, and appear very unſightly; ſo they ſhould only be cover'd in very hard Froſts, and continually expos'd when the Weather is mild.

The twenty-ſeventh and twenty-eighth Sorts were brought from the *Cape of Good Hope*; ſo are more tender than the former: therefore theſe muſt always be kept in Pots, and in Winter ſhould be placed in an airy Glaſs-caſe, where in mild Weather they may have as much free Air as poſſible; they ſhould be frequently water'd, for they are very thirſty Plants. In ſevere Froſt they muſt be carefully guarded; but they will bear a little Cold pretty well.

All the ſhrubby Sorts of Scabious may be propagated by Cuttings, which may be taken off during any of the Summer months; and ſhould be planted in a ſhady Border, and duly water'd in dry Weather, which will promote their taking Root; and then they may be potted, and placed in a ſhady Situation, till they have taken new Root; after which time they may be placed amongſt other hardy Exotic Plants, in a ſhelter'd Situation, where they may remain until the End of *October*, when they muſt be removed into Shelter. In ſome favourable Seaſons theſe Plants will produce good Seeds in *England*, ſo that the Plants may be raiſed from theſe, by ſowing them in an open Border of light Earth about the Middle of *March*; and if the Spring ſhould prove very dry, it will be neceſſary to water the Ground now-and-then, which will forward the Vegetation of the Seed; ſo that the Plants will appear in about three Weeks after the Seeds are ſown. When they come up, they muſt be kept clear from Weeds, and in dry Weather duly water'd; and when they are ſtrong enough to tranſplant, they ſhould be planted in Pots, and managed in the ſame manner as thoſe Plants which are propagated by Cuttings.

The twenty-ninth, thirty-ſecond, thirty third, thirty-fourth, and thirty-fifth Sorts are annual Plants, which are only propagated by Seeds. Theſe may be managed in the ſame manner as hath been directed for the *Indian* Scabious's.

All the Sorts of Scabious continue a long time in Flower, for which they are regarded; for there is no very great Beauty in many of their Flowers: but as moſt of the hardy Sorts produce Flowers near three Months ſucceſſively, they may be allowed a Place in the Borders of large Gardens, becauſe they require very little Care to cultivate them. And as the ſhrubby Kinds continue in Flower moſt Part of the Year, they make an agreeable Variety amongſt hardy Exotic Plants in Winter.

SCANDIX, Shepherds Needle, or Venus-comb.

The *Characters* are;

It hath a roſe-ſhaped umbellated Flower, conſiſting of ſeveral Petals, which are ranged orbicularly, and reſt on the Empalement; which becomes a Fruit conſiſting of two Parts, having two Seeds, which reſemble a Needle, when joined.

The *Species* are;

1. SCANDIX *ſemine roſtrato, vulgaris. C. B. P.* Common Shepherds Needle, with beaked Seeds.

2. SCANDIX *Cretica major. C. B. P.* Great Shepherds Needle of *Crete*.

3. SCANDIX *Cretica minor. C. B. P.* Smaller Shepherds Needle of *Crete*.

4. SCANDIX *Orientalis, flore maximo. Tourn. Cor.* Eaſtern Shepherds Needle, with a very large Flower.

The firſt of theſe Plants grows wild amongſt Corn, in moſt Parts of *England*. The ſecond and third Sorts grow wild in the Iſland of *Candia*; and the fourth Sort was diſcovered by Dr. *Tournefort* in the *Levant*.

Theſe Plants are preſerv'd by the Curious in Botany, for the ſake of Variety; but are ſeldom admitted into other Gardens. The Fruit of theſe Plants, having Beaks greatly reſembling Cranes Bills, may be taken for them at a ſmall Diſtance; but being ranged ſomewhat like the Teeth of a Comb, occaſion'd the Name given to it.

They may be propagated by Seeds, which ſhould be ſown in Autumn, ſoon after they are ripe, in the Place where they are deſign'd to remain, which ſhould be in a ſhady Situation; and when the Plants are come up, they will require no farther Care, but to keep them clear from Weeds. In *May* the Plants will flower, and in the Beginning of *July* they will perfect their Seeds, and ſoon after decay. But if their Seeds are permitted to ſcatter, the Plants will come up without any manner of Care, and become Weeds in the Garden.

SCILLA, Squills.

The *Characters* are;

It hath a large, acrid, bulbous Root, like an Onion: the Leaves are broad: the Flowers are like thoſe of Ornithogalum, or the Starry Hyacinth: they grow in a long Spike, and come out before the Leaves.

The *Species* are;

1. SCILLA *vulgaris, radice rubra. C. B. P.* Common red Squill.

2. SCILLA *radice alba. C. B. P.* The white Squill.

Theſe Plants are very common upon the ſandy Shores of *Spain*, and the *Levant*, from whence their Roots are annually brought to *England*, for medicinal Uſe: but altho' theſe Roots are brought over chiefly for medicinal Uſe, yet are they worthy of being cultivated in every good Garden, for the Beauty of their Flowers; which make a very handſome Appearance when they are ſtrong Roots.

The beſt time to tranſplant theſe Roots is in *May*, when their Leaves are decay'd: and if the Roots are brought from Abroad, if they can be procur'd firm at that Seaſon, or a little after, they ſhould be planted in Pots of light ſandy Earth, and placed in the Windows of the Green-houſe; where, if they are blowing Roots, they will flower the *July* following.

Theſe Plants muſt be preſerv'd in Shelter during the Winter-ſeaſon; becauſe, if their Leaves are deſtroy'd by Froſt in Winter, the Roots are ſubject to periſh: but in Summer they ſhould be expos'd to the open Air, and in dry Weather muſt be frequently water'd; eſpecially during the Seaſon their Leaves are on, or that they are in Flower: but when the Roots are in a State of Reſt, they ſhould have but little Moiſture; for Wet at that time will rot them. They are pretty hardy, and only require to be ſhelter'd from hard Froſt; but muſt have as much free Air as poſſible in open Weather.

SCLAREA, Clary.

The *Characters* are;

It is a verticillate Plant, with a labiated Flower, conſiſting of one Leaf, whoſe Upper-lip (or Creſt) is hooked; but the Under-lip (or Beard) is divided into three Parts, the middle Segment being hollow and bifid: out of the Flower-cup riſes the Pointal, attended by four Embryoes, which afterward turn to ſo many roundiſh Seeds incloſed in an Huſk, which was before the Flower-cup.

The *Species* are;

1. Sclarea. *Tabern. Ic.* Common Garden Clary.

2. Sclarea *vulgaris lanuginoſa, ampliſſimo folio. Tourn.* Common downy Clary, with a large Leaf.

3. Sclarea *laciniatis foliis. Tourn.* Clary with a jagged Leaf.

4. Sclarea *Luſitanica glutinoſa, ampliſſimo folio. Tourn. Portugal* Clary, with a large glutinous Leaf.

5. Sclarea *Indica, flore variegato. Tourn. Indian* Clary, with a variegated Flower,

6. Sclarea *rugoſo, verrucoſo, & laciniato folio. Tourn.* Clary with a rough, warted, and jagged Leaf.

7. Sclarea *glutinoſa, floris lutei variegati barba ampla cava. Boerh. Ind.* Glutinous Clary, with a yellow variegated Flower, having a large hollow Beard, commonly call'd Jupiter's Diſtaff.

8. Sclarea *folio ſalviæ, minor, ſive glabra. Tourn.* Leſſer or ſmooth Clary with a Sage-leaf.

9. Sclarea *Orientalis, folio betonicæ acutiſſimo, coma purpuraſcente. T. Cor.* Eaſtern Clary, with a ſharp-pointed Betony-leaf, and a purpliſh Top.

10. Sclarea *pratenſis, foliis ſerratis, flore ſuave-rubente. Tourn.* Meadow Clary, with ſerrated Leaves, and a ſoft-red Flower.

The common Garden Clary is chiefly cultivated in *England* for medicinal Uſe; but the other Sorts are preſerv'd in Botanic Gardens for the ſake of Variety, with many other Sorts of leſs Note: however, thoſe here mention'd are worthy of a Place in large Gardens, where, if they are intermix'd among other large-growing Plants, they will afford a pretty Variety; eſpecially the fifth, eighth, ninth, and tenth Sorts, which produce long Spikes of beautiful Flowers, and continue a long time in Beauty.

The Flowers of the ſeventh Sort are us'd in *Holland*, to give a Flavour to the *Rheniſh* Wines, which are brew'd at *Dort*.

All theſe Sorts may be propagated by ſowing their Seeds upon a Bed of freſh Earth in *March* or *April*; and when the Plants are come up, they ſhould be tranſplanted into Beds of freſh Earth, about eight Inches aſunder, obſerving to water them until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds until *Michaelmas*, when they ſhould be tranſplanted into the Places where they are to remain, placing them at a large Diſtance; for they ſpread pretty far, provided the Soil be good. If theſe Plants are planted for a Crop intended for medicinal Uſe, they ſhould be planted in Rows two Feet and an half aſunder, and the Plants eighteen Inches diſtant in the Rows; but the other Sorts to be placed in Borders ſhould be planted eight or ten Feet diſtant, being intermix'd with other Plants. Some of theſe Sorts will endure many Years, provided they are planted on a freſh Soil, not over-moiſt or rich; but others rarely continue longer than the ſecond Year, periſhing ſoon after they have perfected their Seeds: theſe ſhould therefore be often renewed from Seeds, to have a Continuance of them; but the other Sorts may be increaſed by parting their Roots, the beſt time for which is at *Michaelmas*, when their Stems begin to decay.

SCOLYMUS, The Golden-thiſtle.

The *Characters* are;

The whole Plant hath the Appearance of a Thiſtle: the Flower conſiſts of many Half-florets, which reſt on the Embryoes; each of theſe are ſeparated by a thin Leaf; and on the Top of each Embryo is faſten'd a little Leaf: theſe are contain'd in a ſcaly Empalement, which incloſes the Seed.

The *Species* are;

1. Scolymus *chryſanthemus*. *C. B. P.* The Golden-thiſtle.

2. Scolymus *chryſanthemus annuus*. *H. R. Par.* Annual Golden-thiſtle.

3. Scolymus *chryſanthemus Africanus procerior*. *H.R. Par.* Taller *African* Golden-thiſtle.

The firſt and ſecond Sorts grow wild in the South of *France*, and in *Spain*; but the third Sort is a Native of *Africa*. The firſt and third Sorts are biennial Plants; but the ſecond is an annual, and periſhes ſoon after it has perfected its Seeds.

They are propagated by Seeds, which ſhould be ſown in *March*, on a Bed of freſh undung'd Earth, in an open Situation; and when the Plants are come up, they ſhould be kept clear from Weeds; and where they grow too cloſe, ſome of them ſhould be pulled out, ſo as to leave thoſe which are deſign'd to remain, about two Feet aſunder. This is all the Culture which theſe Plants require; for as they ſend forth Tap-roots, they do not bear tranſplanting well; therefore they muſt be ſown where they are to remain; and if they are kept clear from Weeds, they will thrive very well; and when the Seaſons prove dry, will perfect their Seeds in Autumn; but in wet Seaſons they rarely ever produce good Seeds in *England*; which renders it difficult to continue the Species, without procuring freſh Seeds from Abroad.

Theſe Plants are preſerved by thoſe Perſons who are curious in Botany, for Variety-ſake; but are rarely planted in other Gardens.

SCORDIUM, Water-germander.

The *Characters* are;

The Flowers are like thoſe of Germander, which are produc'd from the Wings of the Leaves: the Flower-cup is tubulous; and the whole Plant ſmells like Garlick.

The *Species* are;

1. Scordium. *C. B. P.* Common Water-germander.

2. Scordium *alterum, ſive ſalvia agreſtis*. *C. B. P.* Wild-ſage, *vulgo*.

3. Scordium *fruteſcens, folio anguſto ſalviæ, flore luteolo*. *Boerh. Ind.* Shrubby Wild-ſage, with a narrow Sage-leaf, and yellowiſh Flowers.

The firſt of theſe Plants grows wild in moiſt Places in the *Iſle of Ely*, in great Plenty; but near *London* it is propagated in Gardens for medicinal Uſe. This Plant is increaſed by parting the Roots, or from Cuttings or Slips: the beſt time for this Work is the Beginning of *March*. Theſe Slips muſt be planted in Beds of moiſt Earth, about four or five Inches aſunder, obſerving to water them well until they have taken Root; after which they will require no further Care but to keep them clear from Weeds, and in *July* the Plants will be fit to cut for medicinal Uſe, being at that time in Flower; but it is not proper to tranſplant them every Year, for then the Crop will be ſmaller; therefore every other Year will be ſufficient to renew theſe Beds: nor ſhould they be planted again upon the ſame Ground, but upon a freſh Spot; otherwiſe they will not thrive.

The Wild-ſage is very common in Woods, and ſhady Places, in divers Parts of *England*; and is rarely cultivated in Gardens, except by thoſe who are curious in Botany. This may be propagated by ſowing the Seeds in the Spring upon a Bed of freſh Earth; and when the Plants are come up, they ſhould be tranſplanted out, at about a Foot aſunder, upon a freſh light Soil, obſerving to water them until they have taken Root; after which they will require no farther Care but to keep them clear from Weeds; for they are extremely hardy, and will abide many Years in almoſt any Soil or Situation.

The third Sort is of a more tender Nature, and requires to be ſhelter'd from ſevere Froſt; to which if it be expos'd, it is often deſtroy'd. This may be propagated by ſowing the Seeds as the former; but when the Plants come up they ſhould be plac'd in Pots of freſh Earth, and in Winter put in an airy Part of the Green-houſe, where they may enjoy the free Air when the Weather is mild; for if they are too much drawn, they are ſubject to mould and decay. In the Summer-ſeaſon they ſhould be expos'd to the open Air, with Myrtles, and other foreign Plants; and muſt be frequently refreſh'd with Water.

SCORPIURUS, Caterpillers.

The *Characters* are;

It hath a papilionaceous Flower, out of whoſe Empalement riſes the Pointal, which afterward becomes a jointed Pod, convoluted like a Snail or Caterpiller, having a Seed in each Joint, which is, for the moſt part, of an oval Figure.

The *Species* are;

1. Scorpiurus *bupleuri folio. C. B. P.* The great rough Caterpiller.

2. Scorpiurus *bupleuri folio, corniculis aſperis, magis in ſe contortis & convolutis. Mor. Hiſt.* Prickly Caterpiller.

3. Scorpiurus *bupleuri folio, ſiliquis levibus. Park. Theat.* Smooth-podded Caterpiller.

4. Scorpiurus *ſiliqua craſſa Boelii. Ger. Emac.* Thick-podded Caterpiller.

5. Scorpiurus *ſiliqua cochleata & ſtriata Olyſſiponenſis. H. R. Par.* Caterpiller with a twiſted furrowed Pod.

6. Scorpiurus *foliis viciæ, minima. Mor. Hiſt.* The ſmalleſt Caterpiller, with Vetch-leaves.

Theſe Plants are preſerv'd in ſeveral curious Gardens, for their Oddneſs more than for any great Beauty: they are all of them annual Plants, which are propagated by ſowing their Seeds upon a Bed of freſh light Earth; and when the Plants are come up, they ſhould be thinned, ſo as to leave them about ten Inches or a Foot aſunder, becauſe their Branches trail upon the

Ground ; and if they have not room, they are apt to overbear each other, and thereby are very often rotted, eſpecially in moiſt Seaſons. The Weeds ſhould alſo be diligently clear'd from them, otherwiſe they will grow over and deſtroy them: in *June* theſe Plants will produce ſmall yellow papilionaceous Flowers, which are ſucceeded by Pods, which of the firſt Sort are ſo much like Caterpillers, that a Perſon, at a ſmall Diſtance, would imagine they were real Caterpillers feeding on the Plants ; and it is for this Oddneſs of their Pods that theſe Plants are chiefly preſerv'd.

Theſe Plants will ſeldom thrive well, if they are tranſplanted ; therefore the beſt Method is, to put in three or four good Seeds in each Place where you would have the Plants remain (which may be in the Middle of large Borders in the Pleaſure-garden, where being intermix'd with other Plants, they will afford a pleaſing Variety). When the Plants come up, there ſhould be only one of the moſt promiſing left in each Place, which ſhould be conſtantly kept clear from Weeds ; and when their Pods are ripe, they ſhould be gather'd and preſerv'd in a dry Place till the following Spring, in order to be ſown.

The firſt, third, and fourth Sorts are the beſt worth cultivating, their Pods being large, and more viſible than the other, and are more in form of a Caterpiller.

SCORZONERA, Vipers-graſs.

The *Characters* are ;

It hath a ſemifloſculous Flower, conſiſting of many Half-florets, which reſt upon the Embryoes, which are included in one common Empalement, which is ſcaly : the Embryoes afterward become oblong Seeds, which are furniſh'd with Down.

The *Species* are ;

1. SCORZONERA *latifolia ſinuata.* C. B. P. Common or broad-leav'd Vipers-graſs, with an indented Leaf.

2. SCORZONERA *latifolia altera.* C. B. P. Another broad-leav'd Vipers-graſs.

3. SCORZONERA *laciniatis foliis. Tourn.* Vipers-graſs with jagged Leaves.

The firſt of theſe Sorts is what the College of Phyſicians have directed for medicinal Uſe ; and it is alſo cultivated for the Uſe of the Kitchen in divers Gardens near *London* ; tho' at preſent it is not ſo much propagated as it hath been ſome Years ſince, when it was more commonly brought to the Markets.

The ſecond Sort is equally as good as the firſt for all the Purpoſes for which that is cultivated ; but as it is leſs common, it is rarely found in *England*, except in Botanic Gardens ; where the third Sort is alſo cultivated for Variety, but is never apply'd to any Uſes.

Theſe Plants may be propagated by ſowing their Seeds in the Spring upon a Spot of freſh light Soil. The beſt Method of ſowing them is, to draw ſhallow Furrows by a Line about a Foot aſunder, into which you ſhould ſcatter the Seeds, thinly covering them over about half an Inch thick with the ſame light Earth; and when the Plants are come up, they ſhould be thinned where they are too cloſe in the Rows, leaving them at leaſt ſix Inches aſunder ; and, at the ſame time, you ſhould hoe down all the Weeds to deſtroy them : and this muſt be repeated as often as is neceſſary ; for if the Weeds are permitted to grow among the Plants, they will draw them up weak, and prevent their Growth.

There are many People who ſow theſe Seeds promiſcuouſly in a Bed, and afterward tranſplant them out at the Diſtance they would have them grow: but this is not ſo well as the former Method, becauſe their Roots commonly ſhoot downright, which, in being tranſplanted, are often broken; ſo that they never will make ſuch fair Roots as thoſe which remain in the ſame Place where they are ſown: for when the extreme Part of the Root is broken, it never extends itſelf in Length afterward; but only ſhoots out into many forked ſmall Roots, which are not near ſo valuable as thoſe which are large and ſtrait. Theſe Roots may be taken up when the Leaves begin to decay; at which time, they have done growing; tho' they may remain in the Ground until Spring, and may be taken up as they are uſed: but thoſe which remain in the Ground after *March* will ſhoot up their Flower-ſtems; after which they are not ſo good, being ſticky and ſtrong.

If you intend to ſave Seeds of theſe Plants, you ſhould let a Parcel of the beſt remain in the Places where they grew; and when their Stems are grown to their Height, they ſhould be ſupported with Stakes, to prevent their falling to the Ground, or breaking. In *June* they will flower; and about the Beginning of *Auguſt* their Seeds will ripen, when they ſhould be gather'd, and preſerv'd dry till the Spring following, for Uſe.

SCROPHULARIA, Figwort.

The *Characters* are;

It hath an anomalous Flower, conſiſting of one Leaf, gaping on both Sides, and generally globular, cut, as it were, into two Lips; under the upper one of which are two ſmall Leaves: the Pointal riſes out of the Flower-cup, which afterward turns to a Fruit or Huſk, with a roundiſh-pointed End, opening into two Diviſions, parted into two Cells by an intermediate Partition, and full of ſmall Seeds, which adhere to the Placenta.

The *Species* are;

1. SCROPHULARIA *nodoſa fœtida. C. B. P.* Stinking knobbed-rooted Figwort.
2. SCROPHULARIA *aquatica major. C. B. P.* Greater Water Figwort.
3. SCROPHULARIA *Hiſpanica, ſambuci folio glabro. Tourn. Spaniſh* Figwort, with a ſmooth Elder-leaf.
4. SCROPHULARIA *maxima Luſitanica, ſambuci folio lanuginoſo. Tourn.* Greateſt *Portugal* Figwort, with a woolly Elder-leaf.
5. SCROPHULARIA *rutæ canina dicta vulgaris. C. B. P.* Figwort, commonly called Dog's-rue.
6. SCROPHULARIA *ſaxatilis lucida, laſerpitii Maſſilienſis foliis. Boc. Muſ.* Shining Rock Figwort, with Leaves like the *Marſeilles* Laſerwort.
7. SCROPHULARIA *glauco folio, in amplas lacinias diviſo. Tourn.* Figwort with a ſea-green Leaf, divided into large Segments.
8. SCROPHULARIA *foliis filicis modo laciniatis, vel ruta canina latifolia. C. B. P.* Figwort with Leaves jagged after the manner of Fern, or broad-leav'd Dog's-rue.
9. SCROPHULARIA *flore luteo. C. B. P.* Figwort with a yellow Flower.
10. SCROPHULARIA *folio urticæ. C. B. P.* Figwort with a Nettle-leaf.
11. SCROPHULARIA *betonicæ folio. Inſt. R. H.* Figwort with a Betony-leaf.

12. Scrophularia *ſcorodoniæ folio. Mor. Hiſt.* Figwort with a Wood-ſage-leaf.

13. Scrophularia *peregrina fruteſcens, foliis teucrii craſſiuſculis. Breyn. Cent.* Foreign ſhrubby Figwort, with a thick Tree Germander-leaf.

14. Scrophularia *Luſitanica fruteſcens, verbenacæ foliis. Inſt. R. H.* Shrubby *Portugal* Figwort, with Vervain leaves.

15. Scrophularia *Cretica fruteſcens, folio vario craſſiori. Tourn. Cor.* Shrubby Figwort of *Candia*, with a thicker variable Leaf.

16. Scrophularia *Græca fruteſcens & perennis, urticæ folio. Tourn. Cor. Greek* ſhrubby and perennial Figwort, with a Nettle-leaf.

17. Scrophuraria *Epheſia, lunariæ folio, flore rubro. Tourn. Cor. Epheſian* Figwort, with a Moonwort-leaf, and a red Flower.

18. Scrophularia *Orientalis, foliis cannabinis. Tourn. Cor.* Eaſtern Figwort, with Baſtard-hemp-leaves.

19. Scrophularia *Orientalis, ampliſſimo folio, caule alato. Tourn. Cor.* Eaſtern Figwort, with a large Leaf, and a winged Stalk.

20. Scrophularia *Orientalis, tiliæ folio. Tourn. Cor.* Eaſtern Figwort, with a Lime-tree leaf.

21. Scrophularia *Orientalis, chryſanthemi folio, flore minimo variegato. Tourn. Cor.* Eaſtern Figwort, with a Corn-marigold-leaf, and the leaſt variegated Flower.

The firſt Sort here mention'd grows wild in great Plenty in Woods, and other ſhady Places, in divers Parts of *England*, and is rarely cultivated in Gardens: but this being the Sort which the College of Phyſicians have directed for medicinal Uſe, under the Title of *Scrophularia major*, it is by ſome preſerved in their Phyſic-gardens.

The ſecond Sort is alſo very common in moiſt Places, and by the Sides of Ditches almoſt every-where: this is alſo an officinal Plant, and ſtands in the Catalogue of Simples, under the Title of *Betonica aquatica, i. e.* Water-betony, becauſe the Leaves are ſomewhat like thoſe of Betony.

Theſe two Plants may be eaſily propagated in Gardens, by ſowing their Seeds early in the Spring upon a Bed of freſh Earth, in a ſhady Situation; and when the Plants are come up, they ſhould be tranſplanted out into a ſtrong moiſt Soil, about two Feet aſunder, obſerving to water them until they have taken Root; after which they will require no farther Care, but to hoe down the Weeds between them, from time to time, as they are produced. The ſecond Year theſe Plants will ſhoot up to flower; and if their Stems are ſuffered to remain, they will produce Seed: but the Herb is generally cut for Uſe, juſt as the Flowers begin to open; for if it ſtands longer, the Leaves change, and the whole Plant contains much leſs Juice. Theſe Roots will abide many Years without renewing: but it will be proper to tranſplant them every other Year, otherwiſe their Roots will ſpread over each other, and thereby deſtroy themſelves.

The third and fourth Sorts are very beautiful Plants, being worthy of a Place in every good Garden: theſe are ſomewhat tenderer than the former Sorts; tho' they will endure the Cold of our ordinary Winters, if planted in a light Soil, and a warm Situation. Theſe may be propagated by ſowing their Seeds in the Spring, upon a Bed of freſh

Earth; and when the Plants are come up, they ſhould be tranſplanted into Beds of freſh Earth, at about ſix Inches Diſtance from each other, obſerving to water and ſhade them until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds, and in very dry Weather to refreſh them with Water.

At *Michaelmas* ſome of them may be tranſplanted into the Middle of warm Borders in the Pleaſure-garden; and the reſt maybe planted into Pots fill'd with freſh light Earth, which in Winter ſhould be ſheltered under a common Hot-bed-frame, where they may be covered in froſty Weather; but in mild Weather they ſhould have as much free Air as poſſible. Theſe Plants, thus ſhelter'd, will flower very ſtrong in *May*; and if duly watered in dry Weather, will produce ripe Seeds in *July*, which may be gathered in the Pods, and preſerved for ſowing. The Roots of theſe Plants will abide three or four Years, unleſs deſtroyed by great Cold; and may be parted, to increaſe them: but theſe Plants which are propagated from Slips, ſeldom flower ſo ſtrong as thoſe produced from Seeds; ſo that it is the beſt Way to raiſe every Year ſome from Seeds to ſucceed the old Roots.

The fifth, ſixth, ſeventh, and eighth Sorts are alſo tender, and will rarely endure the Cold of our Winters without Shelter, unleſs in ſome very warm Situations; therefore theſe ſhould be planted in Pots fill'd with freſh light Earth, and ſheltered in Winter as the two former Sorts. Theſe may be propagated from Seeds, as the former Sorts. Theſe Sorts ſeldom abide longer than two Years, and muſt be defended from Froſt in Winter; ſo that they ſhould be often renew'd from Seeds.

The ninth, tenth, eleventh, and twenty-firſt Sorts are biennial Plants, which very rarely live longer than two Years. Theſe ſeldom flower the ſame Seaſon their Seeds are ſown; or if they do, it is generally pretty late in Autumn; ſo that they do not produce good Seeds: but when the Plants grow ſhort, and do not put out their Flower-ſtems the firſt Year, they flower very ſtrong early in the following Summer, and produce good Seeds. Theſe Sorts are hardy enough to endure the Cold of our ordinary Winters very well, provided they are planted in a dry undunged Soil.

The twelfth, thirteenth, fourteenth, fifteenth, ſixteenth, eighteenth, nineteenth, and twentieth Sorts are abiding Plants, their Roots continuing many Years; and the eighteenth Sort creeps at the Root, ſo that it propagates very faſt that way, as alſo by Seeds. This is an extreme hardy Plant, and will live in almoſt any Soil and Situation; but ſhould not be planted too near other Plants, becauſe it creeps ſo far, as to interfere with ſuch Plants as grow near it.

The other Sorts will endure the Cold of our ordinary Winters very well, if they are planted in a ſheltered Situation; and when they are planted in a lean rubbiſhy Soil, they will not grow too freely, but will be ſtinted, and endure a much greater Share of Cold, than when they are planted in a rich Soil, where they become very luxuriant.

All theſe Sorts are propagated by Seeds, which ſhould be ſown on a Bed of light Earth in the Spring; but it often happens, that the Seeds will lie in the Ground a Year, or longer, before the Plants come up; ſo that the Ground ſhould not be diſturbed if the Plants do not appear the firſt Year: but it ſhould be kept clean from Weeds, and wait until the Plants come up; and when they are fit to remove, they ſhould be tranſplanted where they are to remain. Theſe Sorts are preſerved by thoſe who are curious in the Study of Plants; but are rarely propagated in other Gardens.

SCUTELLARIA, Scull-cap.

The *Characters* are;

*The Empalement of the Flower is of the Lip-kind; the upper Segment reſembling an Helmet; and is divided into three Segments; the middle being broad and concave; but the other two are narrow and plain: the Beard, or lower Lip, is divided into two equal Segments: the*Calyx, *having a Cover, contains a Fruit reſembling the Heel of a Slipper or Shoe; which Character is ſufficient to diſtinguiſh it from all the other* Genera *of this Claſs.*

The *Species* are;

1. Scutellaria *foliis ovatis ſerratis, ſpica interrupta. Lin. Hort. Cliff.* Scull-cap with oval ſawed Leaves, and an interrupted Spike.

2. Scutellaria *foliis cordato-lanceolatis crenatis. Lin. Hort. Cliff.* Marſh common Scull-cap,

3. Scutellaria *foliis ovatis crenatis, ſpicis imbricatis. Lin. Hort. Cliff. Alpine* Scull-cap, with a large Flower, and an imbricated Spike.

4. Scutellaria *foliis inciſo-ſerratis utrinque glabris, ſpica tetragona. Lin. Hort. Upſal. Alpine* Scull-cap, with ſmooth ſawed Leaves, and a large Flower with a ſquare Spike.

5. Scutellaria *foliis cordato-lanceolatis ſerratis, pedunculis multifloris. Flor. Leyd.* Scull-cap with heart-ſhaped ſawed Leaves, and many long Flowers growing upon each Footſtalk.

6. Scutellaria *foliis cordatis obtuſis obtuſe ſerratis, ſpicis folioſis. Flor. Leyd.* Scull-cap with blunt heart-ſhaped ſawed Leaves, and a leafy Spike.

7. Scutellaria *foliis cordato-oblongis acuminatis ſerratis, ſpicis ſubnudis. Flor. Leyd.* Scull-cap with oblong pointed heart-ſhaped Leaves, which are ſawed, and the lower Part of the Spike naked.

8. Scutellaria *foliis pinnatifidis. Lin. Hort. Cliff.* Eaſtern Scull-cap, with elegant cut Leaves.

9. Scutellaria *incana, foliis magis laciniatis, flore luteo.* Hoary Eaſtern Scull-cap, with Leaves much cut.

The ſecond Sort is a common Weed, which grows plentifully by the Side of Ditches, in moſt Parts of *England*; therefore is not admitted into Gardens: this was formely titled *Lyſimachia galericulata.*

The firſt Sort grows plentifully in *Italy*, and other warm Countries, in moiſt Places: this is a Plant of no great Beauty; but is kept in Botanic Gardens for the ſake of Variety.

The third and fourth Sorts are Natives of the *Alps*; the Branches of theſe trail upon the Ground; and at the End of each there is a Spike of large Flowers, which in one Sort are blue, with yellow Falls; and thoſe of the other are white: the Flowers of theſe Plants continue a long time; ſo a few Plants of each Sort may be admitted to have a Place in large Gardens, where they will add to the Variety: theſe perfect their Seeds very well in *England*; ſo that they may be propagated in plenty: the Seeds may be ſown upon a Bed of common Earth about the Latter-end of *March*; and when the Plants are fit to remove, they may be either planted in the Borders of the Pleaſure-garden, or into Nurſery-beds, where they may ſtay till the following Autumn; and then they ſhould be planted where they are deſign'd to remain: they are very hardy Plants; therefore will thrive in any Situation, and continue ſeveral Years.

The fifth, ſixth, and ſeventh Sorts have upright Shoots; and the Flowers of theſe are produc'd in long Spikes; but they are ſmall, and have little Beauty; ſo the Plants are only preſerved in the Gardens of the Curious, for the ſake of Variety: they are hardy perennial Plants, and perfect their Seeds in plenty every Year; ſo may be propagated in the ſame manner as the former.

The eighth and ninth Sorts have trailing Branches, which are garniſhed with elegant Leaves; thoſe of the eighth Sort being ſhaped like Germander, and are hoary underneath: thoſe of the ninth Sort are deeply ſawed, and are hoary on both Sides: theſe produce Spikes of yellow Flowers, which make a pretty Appearance, and continue long in Beauty; ſo that they deſerve a Place in every curious Garden: theſe Sorts are pretty hardy, in reſpect to Cold; but they ſhould be planted on a dry Soil, otherwiſe they will not live thro' the Winter; nor do theſe Plants thrive well in Pots; therefore they ſhould always be planted in the full Ground: they perfect their Seeds well every Year; ſo young Plants ſhould be annually raiſed, becauſe they ſeldom continue longer than two Years.

SECALE, Rye.

The *Characters* are;

The Flowers have no Leaves, but conſiſt of ſeveral Stamina, *which are produc'd from the Flower-cup: theſe Flowers are collected into a flat Spike, and are diſpoſed almoſt ſingly: from the Flower-cup riſes the Pointal; which afterward becomes an oblong ſlender Seed, incloſed in an Huſk, which was before the Flower-cup: this differs from Wheat, in having a flatter Spike, the Awn larger, and more naked.*

The *Species* are;

1. Secale *hybernum, vel majus.* C. B. P. Common or Winter Rye.
2. Secale *vernum & minus.* C. B. P. Leſſer or Spring Rye.

The firſt Sort is what the generality of Farmers propagate, and is uſually ſown in Autumn, at the ſame Seaſon with Wheat: and in many of the Northern Counties, as alſo in *Wales*, they are often mixed together: tho' I think it muſt be very bad Huſbandry; for the Rye will always ripen ſooner than Wheat; ſo that if the latter is permitted to ſtand to be fully ripe, the former will ſhatter: nor can this be practiſed where the People are not accuſtom'd to eat Rye-bread; for altho' it is by ſome accounted good when mixed, yet it being ſo very clammy, few People, who have been fed with Wheat, will ever care to eat the Bread made of this.

It is generally ſown on poor, dry, gravelly, or ſandy Land, where Wheat will not thrive; and in ſuch Places may anſwer very well: but on ſuch Land as will bear Wheat, it is not proper to ſow Rye; ſince of late Years that Wheat has been at a low Price, the other has been worth little.

When Rye is ſown, the Ground ſhould not be too wet; and if it ſhould happen, that much Rain falls before the Rye is come up, it often rots in the Ground; but it is not long in coming up, it being much ſooner out of the Ground than Wheat.

The ſmall Rye may be ſown in the Spring, about the ſame time with Oats, and is uſually ripe as ſoon as the other Sort: but if the Seaſon proves wet, it is apt to run much to Straw; and the Grain is generally lighter than the other; ſo the only Uſe of this Sort is to ſow upon ſuch Lands, where the Autumnal Crop may have miſcarried.

The general Uſe of Rye is for Bread, either alone, or mixed with Wheat; but (as was before obſerved) it is only fit for ſuch Perſons who have always been uſed to this Food, few other Perſons caring to eat of it: nor have I ever heard of its having been exported; ſo can never be worth cultivating in general; tho' I have been informed it will yield a ſtrong Spirit, which perhaps may occaſion its being more cultivated, ſince the pernicious Uſe of Spirituous Liquors is now tolerated.

Rye is alſo ſown in Autumn to afford green Feed for Ewes and Lambs in the Spring, before there is plenty of Graſs: when this is intended, the Rye ſhould be ſown early in Autumn, that it may have Strength to furniſh early Feed: the great Uſe of this is, to ſupply the want of Turneps, in thoſe Places where they have failed; as alſo after the Turneps are over, and before the Graſs is grown enough, to ſupply green Feed for the Ewes: ſo that in thoſe Seaſons, when the Turneps in general fail, it is very good Huſbandry to ſow the Land with Rye, eſpecially where there are Stocks of Sheep, which cannot be well ſupported, where green Feed is wanting early in the Spring: therefore thoſe Farmers, who have large live Stocks, ſhould have ſeveral Methods of ſupplying themſelves with ſufficient Feed, leſt ſome ſhould fail; for as Turneps are a very precarious Crop, ſome Land ſhould be ſown with Cole-ſeed, which will ſupply the Want of Turneps in Winter: and if ſome of the Ground, which was ſown late with Turneps, which had failed, was ſown in Autumn with Rye, that would be proper to ſupply the want of Cole-ſeed afterward.

SECURIDACA, Hatchet-vetch.

The *Characters* are;

It hath a papilionaceous Flower, out of whoſe Empalement riſes the Pointal, which afterward becomes an upright, plain, articulated Pod, containing in each Joint a rhomboid Seed, having a Notch on the inner Side.

We have but one *Species* of this Plant in *England*; viz.

SECURIDACA *lutea major. C. B. P.* The greater yellow Hatchet-vetch.

This Plant grows among the Corn in *Spain*, *Italy*, and other warm Countries; but in *England* it is preſerv'd in Botanic Gardens, for the ſake of Variety: this may be propagated by ſowing the Seeds in Borders of freſh light Earth in the Spring, in the Places where they are to abide; for they ſeldom ſucceed well, if they are tranſplanted: they ſhould be allowed at leaſt two Feet Diſtance, becauſe their Branches trail upon the Ground. In *June* theſe Plants will flower, and in *Auguſt* their Seeds will ripen, when they ſhould be gathered, and preſerved for Uſe. A few of theſe Plants may be admitted into every good Garden for Variety; tho' there is no great Beauty in their Flowers.

SEDUM, Houſleek.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are placed orbicularly, and expand in form of a Roſe; out of whoſe Flower-cup riſes the Pointal, which afterward turns to a Fruit, *compoſed, as it were, of many Seed-veſſels, reſembling Huſks, which are collected into a ſort of Head, and full of ſmall Seeds.*

The *Species* are;

1. SEDUM *majus vulgare. C.B.P.* Common great Houſleek.

2. SEDUM *minus luteum, folio acuto. C. B. P.* The moſt ordinary Prickmadam, or Sharp-pointed yellow Houſleek.

3. SEDUM *minus luteum, ramulis reflexis C. B. P.* Yellow Stonecrop, with reflex'd Branches.

4. SEDUM *parvum acre, flore luteo. J. B.* Wall-pepper, or Stonecrop.

5. SEDUM *minus, a rupe Sancti Vincentii. Raii Syn.* Stonecrop of *St. Vincent's Rock.*

6. SEDUM *minus teretifolium album. C. B. P.* White-flower'd Stonecrop, with taper Leaves.

7. SEDUM *minus, circinato folio. C. B. P.* Leſſer Stonecrop, with round Leaves.

8. SEDUM *majus vulgari ſimile, globulis decidentibus. Mor. Hiſt.* Houſleek like the common Sort, throwing off the young ones.

9. SEDUM *montanum tomentoſum. C. B. P.* Mountain woolly Houſleek, commonly called Cobweb Houſleek.

10. SEDUM *majus arboreſcens. J. B.* Greater Tree Houſleek.

11. SEDUM *majus arboreſcens, foliis elegantiſſime variegatis tricoloribus. Boerh. Ind.* Greater Tree Houſleek, with beautiful variegated Leaves.

12. SEDUM *Canarinum, foliis omnium maximis. H. A.* The greateſt Houſleek of the *Canaries.*

13. SEDUM *Afrum ſaxatile, foliolis ſedi vulgaris, in roſam vere compoſitis. Boerh. Ind. African* Rock Houſleek, with ſmall Leaves, like the common Sort, collected like a Roſe.

14. SEDUM *Afrum montanum, foliis ſubrotundis, dentibus albis ſerratis confertim natis. Boerh. Ind. African* mountain Houſleek, with roundiſh indented ſerrated Leaves, with white Edges.

15. SEDUM *Africanum fruteſcens, folio longo ſerrato confertim nato. Boerh. Ind. African* ſhrubby Houſleek, with long ſerrated Leaves.

16. SEDUM *majus montanum, dentatis foliis, alterum. C. B. P.* Another great mountain Houſleek, with indented Leaves.

17. SEDUM *majus montanum, foliis non dentatis, floribus rubentibus. C. B. P.* The great mountain Houſleek, with indented Leaves, and rediſh Flowers.

18. SEDUM *teretifolium majus, flore albo. Mor. Hort. R. Blæſ.* Greater Houſleek, with taper Leaves, and a white Flower.

19. SEDUM *minus, lato & craſſo caule, Portlandicum Belgarum. H. R. Par.* Small *Portland* Houſleek, with a broad and thick Stalk.

20. SEDUM *Alpinum roſeum medium, acuto folio, hæmatodes majus. H. R. Par.* Greater bloody Roſe Houſleek of the *Alps,* with a ſharp-pointed Leaf.

21. SEDUM *Alpinum roſeum medium, aculeo rubente. H. R. Par.* Middle Roſe Houſleek of the *Alps,* with rediſh Prickles.

22. SEDUM *Alpinum roſeum minus, viride & ſubhirſutum. H. R. Par.* Small Roſe green and hairy Houſleek of the *Alps.*

23. SEDUM *Alpinum ſubhirſutum, folio longiore. H. R. Par,* Hairy Houſleek of the *Alps,* with a longer Leaf.

24. SEDUM *Alpinum ſubhirſutum, corona floris purpuraſcente, diſco vi-*

ridi. *H. R. Par.* Hairy Houſleek of the *Alps*, with the Borders of a purpliſh Colour, and the Middle green.

25. Sedum *minus teretifolium luteum*. *C. B. P.* Small taper-leav'd yellow Houſleek.

26. Sedum *minus teretifolium alterum*. *C. B. P.* Another ſmall taper-leav'd Houſleek.

27. Sedum *longifolium, citrino flore*. *Mor. H. R. Blæſ.* Long-leav'd Houſleek, with a citron-colour'd Flower.

28. Sedum *minimum luteum, non acre*. *J. B.* The ſmalleſt yellow Houſleek, which is not acrid.

29. Sedum *minimum non acre, flore albo*. *Raii Hiſt.* The leaſt Houſleek, which is not acrid, with a white Flower.

30. Sedum *Alpinum, flore pallido*. *C. B. P.* *Alpine* Houſleek, with a pale Flower.

31. Sedum *Alpinum, rubro magno flore*. *C. B. P.* *Alpine* Houſleek, with a large red Flower.

32. Sedum *Hiſpanum, folio glauco acuto, flore albido*. *Boerh. Ind. alt.* *Spaniſh* Houſleek, with a pointed ſea-green Leaf, and a whitiſh Flower.

33. Sedum *paluſtre ſubhirſutum purpureum*. *C. B. P.* Hairy purple marſh Houſleek.

34. Sedum *echinatum, vel ſtellatum, flore albo*. *J. B.* Starry Houſleek, with a white Flower.

35. Sedum *echinatum, flore luteo*. *J. B.* Prickly Houſleek, with a yellow Flower.

The firſt Sort is very common in *England*, being often planted upon the Tops of Houſes, and other Buildings; where, being preſerv'd dry, it will endure the greateſt Cold of our Climate. This is directed by the College of Phyſicians to be uſed in Medicine, as a great Cooler. It may be propagated by planting the Off-ſets (which are produced in great Plenty from the old Plants) any time in Summer. It requires to be placed very dry; for if its Roots are moiſt, the Plants will rot in cold Weather.

The ſecond, third, fourth, ſixth, and ſeventh Sorts grow in plenty upon Walls and Buildings in divers Parts of *England*, where they propagate themſelves by their trailing Branches, ſo as, in a ſhort time, to cover the whole Place, provided they are not cut off. The ſixth Sort is alſo preſcribed by the College of Phyſicians, to enter ſome officinal Compoſitions; but the People who ſupply the Markets, commonly ſell the Wall-pepper inſtead of this: which is a very wrong Practice; becauſe the ſixth Sort is a very cold Herb, and is accordingly directed to be put into cooling Ointments: and the Wall-pepper is an exceeding ſharp acrid Plant (from whence it received the Name of Wall-pepper), which renders it contrary to the Intention of the Phyſician: therefore whoever makes uſe of theſe Plants, ſhould be very careful to have the right; otherwiſe it is better to uſe the common great Sort, in which they are not ſo liable to be impoſ'd on.

The fifth Sort is a Native of *St. Vincent's Rock* in *Cornwall*, from whence it hath been taken, and diſtributed into the ſeveral Gardens of ſuch Perſons as are curious in preſerving a Variety of Plants.

Theſe Plants are all extreme hardy, and will thrive exceedingly, if planted in a dry Soil, and an open Situation, where they will propagate themſelves by their trailing Branches, which take Root wherever they touch the Ground.

The eighth and ninth Sorts propagate themſelves by Off-ſets, in the manner as the common Sort; tho' the eighth throws off the young ones from the Top of the old Plants, which, falling on the Ground, take Root, and thereby are increaſed very plentifully. Theſe are both very hardy; and if planted in a dry rubbiſhy Soil, will thrive, and endure the ſevereſt Cold of our Climate.

The tenth Sort is propagated by planting Cuttings during any of the Summer-months, which ſhould be laid in a dry Place a Fortnight after they are cut from the old Plants, that their wounded Parts may heal over before they are planted, otherwiſe they are ſubject to rot. Theſe ſhould be planted in Pots filled with freſh light ſandy Earth, and placed in a ſhady Situation (but not under the Drip of Trees), obſerving to give them now-and-then a little Water, when the Earth is dry: but you muſt be very careful not to let them have too much Moiſture, which will rot them.

When they have taken Root, they may be removed into a more open Situation, placing them amongſt other Exotic Plants, in a Place where they may be defended from ſtrong Winds; in which Situation they may remain until Autumn, when they muſt be removed into the Conſervatory, to be preſerved from Cold in Winter, which will deſtroy them. Tho' they do not require any artificial Heat, but only to be protected from Froſt; yet do they require as much free Air as poſſible in mild Weather; therefore the beſt way of preſerving theſe Plants is, to have an airy Glaſs-caſe; in which many Sorts of Ficoides, and other ſucculent Plants, may be intermix'd with theſe, where they will thrive much better than if placed amongſt Oranges, Myrtles, and other Trees, in a Green-houſe; becauſe the Perſpiration of thoſe Trees renders the Air of the Place damp; and when the Houſe is cloſely ſhut up, this Air is often rancid; which, being imbibed by the Houſleeks, will cauſe their Leaves to fall off, and the Plants will decay ſoon after; whereas, in an open airy Glaſs-caſe, where there are none but ſucculent Plants, there will never be near ſo much Damp in the Air; and in ſuch Places they will thrive and flower almoſt every Winter, when the Plants have gotten ſufficient Strength. Theſe Plants, in moiſt Weather, will ſend forth long Roots from their Branches, four or five Feet from the Ground: and if the Earth is placed near to theſe Roots, they will ſtrike into it, and the Branches may be afterward ſeparated from the old Plants.

The eleventh Sort is a Variety of the tenth, which was accidentally obtained in the Gardens of the late Ducheſs of *Beaufort* at *Badmington*, from a Branch which broke off from one of the plain Sort of Houſleek-trees by Accident; and being planted in Lime-rubbiſh afterward, became beautifully variegated; from which Plant there have been vaſt Numbers raiſed, and diſtributed into many curious Gardens, both at home and abroad. This is propagated in the ſame manner as the former, and requires the ſame Management in Winter: but the Soil in which it is planted ſhould be one Half freſh ſandy Soil, and the other Half Lime-rubbiſh and Sea-ſand, equally mixed, in which it will thrive much better than in a rich Soil: you muſt alſo be very careful not to give it too much Water in Winter, which will cauſe it to caſt its Leaves, and decay. With this Management theſe

Plants will grow to be eight or ten Feet high, and will produce beautiful Spikes of Flowers every Year, which are commonly in Beauty in Winter; and are thereby more valuable, for coming at a Seaſon when few other Plants do flower. Sometimes theſe Plants will produce ripe Seeds, which, if permitted to fall upon the Earth of the Pots, will come up the Summer following, from whence a great Stock of the Plants may be produced; tho' as they ſo eaſily take Root from Cuttings, there will be no occaſion to propagate them any other way.

The twelfth Sort ſeldom produces any Side-branches, but grows up to one ſingle large Head, with very large Leaves. This is only propagated from Seeds; for when the Plants produce their Flowers, they always decay as ſoon as the Seed is ripe; therefore the Seed ſhould either be ſown in Pots filled with light ſandy Earth, as ſoon as it is ripe, or permitted to ſhed upon the Pots where they grow; which muſt be ſheltered from the Froſt in Winter; and the Spring following the young Plants will come up in Plenty; when they ſhould be tranſplanted into Pots filled with freſh light Earth, and expoſed in Summer, with other Exotic Plants, in ſome well-ſhelter'd Situation, where they may remain until *October*, when they ſhould be hous'd with the foregoing Sorts, and managed in the ſame manner as hath been directed for them. Theſe Plants will flower in four or five Years from Seed, provided they are well managed; after which (as was before ſaid) they uſually decay; therefore it is neceſſary to have a Succeſſion of young Plants, that there may be annually ſome to flower. This Sort rather belongs to the Saxiſrage than this Genus.

The thirteenth and fourteenth Sorts are of a ſmaller Growth: theſe rarely riſe above ſix Inches high; but ſend forth a great Quantity of Heads from their Sides; which, if taken off, and planted in freſh light ſandy Earth, will take Root, and make freſh Plants, which may be preſerved in Pots, and houſed in Winter with the other Sorts before-mentioned, aud require to be treated in the ſame way.

The fifteenth Sort grows to be ſhrubby, and may be propagated by planting the Cuttings in the manner directed for the Tree Houſleek, and muſt alſo be hous'd in Winter, and treated in the ſame manner as hath been already directed for that Sort.

Theſe are all of them very ornamental-Plants in the Green-houſe, and add greatly to the Variety, when placed amongſt other curious Exotic Plants.

The other Sorts of Houſleek are very hardy Plants, which will thrive in the open Air in *England*; and may be eaſily propagated by Off-ſets or Branches, which will readily take Root. Thoſe Kinds which trail on the Ground (as many of theſe do), will puſh out Roots from their Branches, and thereby ſpread themſelves to a great Diſtance: but the thirty-ſecond, thirty-fourth, and thirty-fifth Sorts are annual Plants, which are only propagated by Seeds; but if their Seeds are permitted to ſcatter on the Ground, the Plants will come up in Autumn, and require no other Care, but to clear them from great Weeds, which, if permitted to grow amongſt them, would overbear and deſtroy them.

Theſe Plants are preſerved in the Gardens of ſome Perſons, who are curious in Botany; but are very rarely admitted into other Gardens; tho' they may be very ornamental, when rightly diſpoſed; for there are no Plants ſo proper to plant on the Walls of Ruins, or other ruſtic Buildings, where they will thrive without any Trouble, and endure the greateſt Drought, and are never injured by Froſts. And as there is a great Variety of Species, which differ greatly from each other, not only in their Flowers, but alſo in the whole Face of the Plants; ſo they will afford an agreeable Variety, if they are properly diſpoſed. In planting of theſe Plants, there is no other Care required, but to lay a little moiſt Earth on the Joints of the Walls or Buildings where they are deſigned to grow, and therein to plant ſome of the Plants in ſmall Bunches, which will ſoon take Root, and in one Year's time will ſpread to a conſiderable Diſtance. The beſt Seaſon for this Work is a little before *Michaelmas*, that the Plants may be rooted before the hard Froſt comes on. The annual Kinds will alſo grow in the ſame manner, and will ſhed their Seeds, and maintain themſelves without any Trouble, when they are once fix'd in the Place. Theſe Sorts will moſt of them grow from the Joints of Walls, which are perpendicular, where ſcarce any other Plants will live; which renders them more valuable, eſpecially as they are ſo eaſily propagated.

The eighteenth, twenty-fifth, and twenty-ſixth Sorts produce long Branches, which hang down from the Walls where they grow; therefore ſhould be diſpoſed near the Edges of Buildings, or on the Tops of ruſtic Houſes, and near the Sides, where they will trail, and make a pretty Appearance.

The twenty-eighth, twenty-ninth, and thirty-ſecond Sorts have the Appearance of the Stone-crop: theſe have ſhort Branches, and ſmall Leaves, producing their Flowers on the Tops of Shoots, which are ſeldom above three or four Inches high, but ſpread and form into cloſe large Bunches; and where they ſcatter their Seeds, if there is but a ſmall Share of Earth, the Plants will come up, and multiply ſo faſt, as to cover the Top of an Houſe in a few Years.

The ſixteenth, ſeventeenth, nineteenth, twentieth, twenty-firſt, and twenty-ſecond Sorts grow in cloſe Heads, ſomewhat like the common Houſleek, and are propagated by Off-ſets in the ſame manner: theſe may be diſpoſed on the Tops of Walls and Buildings, intermixed with the common Sorts of Houſleek, where they will make a pretty Diverſity, being very different in their Appearance, and producing a great Variety in their Flowers.

SEED: The Seed of a Plant conſiſts of an Embryo, with its Coat or Cover. The Embryo, which contains the whole Plant in Miniature, and which is called the Germ or Bud, is rooted in the *Placenta* or *Cotyledon*, which makes the Coat or *Involucrum*, and ſerves the ſame Purpoſes as the *Secundines*, i. e. the *Chorion* and *Amnis*, in Animals.

A Method for raiſing ſuch Seeds which have hard Coats or Shells ſurrounding them, and that have been judged very difficult, if not impoſſible, to be raiſed in England.

In the Year 1724. I had a Parcel of freſh Cocoa-nuts given me, which was brought over from *Barbados*: Part of theſe Nuts I diveſted of their outward Coat or Huſk, and the other Part I left intire, as I receiv'd them.

Both theſe Parcels I planted in large Pots fill'd with good freſh Earth, and plunged the Pots into Hot-beds made of Tanners Bark, giving them gentle and frequent

Waterings, as the Earth in the Pots ſeem'd to require; but not one out of the whole Number had made any Attempt to ſhoot, as I could perceive; and upon taking them out of the Pots, I found they were rotten.

About four Months after, I received another freſh Parcel of Cocoa-nuts from *Barbados*, which I treated in another manner: from Part of theſe I cut off the outer Coat or Huſk, and the other Part I left intire, as before: but ſuppoſing it was owing to my planting the other Parcel in Pots, that they did not ſucceed, I made a freſh Hot-bed, with Horſe-dung, and covered it over with freſh Earth about eighteen Inches thick, in which I planted the Nuts; obſerving, as before, to ſupply it with convenient Moiſture, as alſo to keep the Hot-bed in an equal Temper of Heat, which I was guided to do by a Thermometer, graduated for the Uſe of Hot-beds; but, with all my Care, I had no better Succeſs than before, not one of the Nuts making an Eſſay towards ſhooting.

The Year following, I had another Parcel of Cocoa-nuts given me, which, conſidering my former ill Succeſs, I planted in a different manner, as follows:

Having an Hot-bed, which had been lately made with Tanners Bark, and which was fill'd with Pots of Exotic Plants, I remov'd two of the largeſt Pots, which were plac'd in the Middle of the Bed; and, opening the Tanners Bark under the Place where the two Pots ſtood, I plac'd the two Cocoa-nuts therein, laying them ſide-ways, to prevent the Moiſture (which might deſcend from the Pots) from entering the Hole at the Baſe of the Fruit, and thereby rotting the ſeminal Plant upon its firſt germinating.

I then cover'd the Nuts over with the Bark two or three Inches thick, and plac'd the two Pots over them in their former Station.

In this Place I let the Nuts remain for ſix Weeks; when removeing the two Pots, and uncovering the Nuts, I found them both ſhot from the Hole in the Baſe of the Fruit an Inch in Length; and from the other End of the Fruit were ſeveral Fibres emitted two or three Inches in Length.

Upon finding them in ſuch a Forwardneſs, I took them out of the Bark, and planted them in large Pots filled with good freſh Earth; plunging the Pots down to the Rims in Tanners Bark, and covering the Surface of the Earth in the Pots half an Inch with the ſame; ſoon after which, the young Shoots were above two Inches long, and continued to thrive very well.

I communicated this Method to ſome of my Acquaintance, who have tried it with the ſame Succeſs; and if the Nuts are freſh, ſcarce any of them miſcarry.

This led me to try, if the ſame Method would ſucceed as well with other hard-ſhell'd Exotic Seeds; which I could not, by any Method I had before tried, get to grow; as the Bonduc or Nickar-tree, the *Abrus* or Wild Liquorice, the *Phaſeolus Braſilianus lobis villoſis pungentibus, Maximus Hermanni*, or Horſe-eye Bean, with ſeveral others; and I have found it both a ſure and expeditious Way to raiſe any Sort of hard-ſhell'd Fruits or Seeds.

For the Heat and Moiſture (which are abſolutely neceſſary to promote Vegetation) they here enjoy in an equal and regular manner, the Tanners Bark (if rightly manag'd) keeping near an Equality of Heat for three Months; and the Water which deſcends from the Pots, when they are water'd, is by the Bark detain'd from being too ſoon diſſipated; which cannot be obtain'd in a common Hot-bed, the Earth in ſuch being work'd away by the Water, and thereby leaving the Seeds often deſtitute of Moiſture.

Some of theſe Seeds I have had ſhoot in a Fortnight's time; which, I am inform'd, would not have ſo done in a Month, in their natural Soil and Climate.

I have alſo found this to be an excellent Method to reſtore Orange (or any other Exotic) Trees, which have ſuffer'd by a tedious Paſſage, in being too long out of the Ground; inſomuch that I recovered two Orange-trees, which had been ten Months without either Earth or Water.

SENECIO, Groundſel.

The *Characters* are;

It hath a floſculous Flower, conſiſting of many Florets, divided into ſeveral Segments, ſitting on the Embryo, contained in an Empalement, conſiſting of one Leaf, and divided into many Parts, afterward becoming of a conical Figure: the Embryo afterward becomes a Seed, furniſh'd with Down; at which time, the Empalement is reflex'd, to make way for the Seeds to eſcape.

The *Species* are;

1. SENECIO *minor vulgaris. C. B. P.* Common Groundſel.

2. SENECIO *Africanus altiſſimus, blattariæ vel hieracii folio. H. L. B.* Talleſt *African* Groundſel, with a Mothmullein-leaf.

3. SENECIO *Maderaſpatanus, rapi folio, floribus maximis, cujus radix a nonnullis China dicitur. Hort. Elth.* The *China* Root.

4. SENECIO *Ægyptius, folio matricariæ. Boerh. Ind. alt.* Egyptian Groundſel, with a Feverfew-leaf.

5. SENECIO *Bonarienſis purpuraſcens, foliis imis coronopi. Hort. Elth.* Purpliſh Groundſel of *Buenos Ayres*, with Under-leaves like Buckſhorn-plantain.

The firſt Sort here mention'd is one of the moſt common Weeds upon Dunghils, old Walls, and Gardens, that we have in *England*; ſo that, inſtead of cultivating it, it requires ſome Pains to deſtroy it in Gardens: for if it be ſuffer'd to ſeed in a Garden (which it ſoon will do, if permitted to ſtand), it will be very difficult to extirpate it. This is ſometimes uſed in Medicine; but its chief Uſe in *England* is to feed Birds.

The ſecond Sort is an annual Plant, which grows three or four Feet high; having large Leaves, which are ſlightly cut on the Edges. This is in plenty in the warm Parts of *America*, as well as in *Africa*: in both Places it is a troubleſome Weed; but in *England* it rarely produces good Seeds, unleſs the Plants are raiſed on an Hot-bed; and being a Plant of no Uſe or Beauty, it is rarely cultivated in Gardens.

The fourth and fifth Sorts are alſo annual Plants: the fourth is a Native of *Egypt*, and is of humble Growth: the fifth Sort was brought from *Buenos Ayres*: this grows upward of two Feet high. Both theſe are very hardy Plants; and if their Seeds are permitted to ſcatter in a Garden, the Plants will come up, and become Weeds there.

The third Sort hath large tuberous Roots, which are order'd for medicinal Uſe, under the Title of *China* Root. This is a perennial Plant, whoſe Roots remain ſeveral Years; but the Stalks and Leaves decay annually in the Autumn; ſo that the Roots remain in an unactive State all the Winter and Spring, and in *May* the new Leaves and Stalks come out; but the Flowers do not appear till the Middle of *July*; and if the Seaſon proves favourable, the Seeds will ripen very well: however, as the Roots increaſe pretty faſt, the Seeds are ſeldom ſown.

This Plant is too tender to live abroad in the Winter; ſo the Roots muſt be planted in Pots filled with light rich Earth; and, during the Summer-ſeaſon, the Plants may be expos'd in the open Air, with other Exotic Plants, in a ſhelter'd Situation; but in Winter they muſt be placed in a warm Stove. During the Summer-ſeaſon, when the Plants are growing, they will require conſtant Watering in dry Weather; but after the Leaves and Stem decay, they ſhould have but little Water; for too much Moiſture will rot the Roots, while they are inactive.

The beſt time to part the Roots of this Plant is in the Spring, about the Middle of *April*, before they begin to ſhoot; but if the Stalks of the Plant are earthed up, while they are growing in the Summer-time, they will put out Roots; ſo that it may be propagated in plenty.

Theſe Plants, having no great Beauty in their Flowers, are ſeldom admitted into Gardens, unleſs by thoſe who are curious in Botanical Studies: however, the third, being a medicinal Plant, may be allowed a Place in ſuch Gardens where there are Conveniencies for preſerving Exotic Plants.

SENNA.

The *Characters* are;

The Flower, for the moſt part, conſiſts of five Leaves, which are placed orbicularly, and expand in form of a Roſe: the Pointal afterward becomes a plain incurved bivalve Pod, which is full of Seeds, each being ſeparated by a double thin Membrane.

There are ſeveral Plants which have been ranged in this Genus; moſt of which are now plac'd under that of *Caſſia*, under which Title they are mention'd; but as the officinal Species of this Genus has been long known in the Shops by the Title of *Senna*, I have choſen to continue it under that Name here; *viz.*

Senna *Alexandrina, ſive foliis acutis. C. B. P. Alexandrian* Senna, with pointed Leaves.

The Leaves of this Plant are annually imported from the *Levant*, being much us'd in Medicine; and in the ſame Bales, there are frequently many of the Pods with their Seeds intermix'd with their Leaves: ſo that from theſe Seeds the Plants may be rais'd in *England*, by ſuch as are curious in Exotic Plants.

The Seeds ſhould be ſown early in the Spring, upon a good Hot-bed; and when the Plants are come up, and are ſtrong enough to tranſplant, they ſhould be each planted in a ſmall Pot fill'd with light rich Earth, and plung'd into a freſh Hot-bed, in order to bring the Plants forward: for as this is an annual Plant, unleſs the Plants are brought forward in the Spring, they will not flower in this Country: therefore they muſt be conſtantly kept in the Hot-bed all the Summer, obſerving to admit plenty of Air in warm Weather; by which Method I have frequently had this Plant in Flower; but it is very rare that they perfect their Seeds in *England*.

If the Seeds of this Plant were ſent to *South-Carolina*, the Plants might be propagated there, ſo as to furniſh plenty of the Leaves, to ſupply the Conſumption of *Great-Britain*.

In the *Weſt Indies*, the Inhabitants make uſe of the Leaves of ſeveral Species of Caſſia, inſtead of this Plant; and alſo of thoſe of the Poinciana, or Flower-fence, which is frequently by them call'd the true Senna.

SENNA THE BLADDER. *Vide* Colutea.

SENNA THE SCORPION. *Vide* Emerus.

SENSIBLE PLANT. *Vide* Mimoſa.

SEPTINERVIA. *Vide* Plantago.

SERJANIA.

This Name was given to this Genus of Plants by Father *Plumier*, who diſcover'd them in *America*, in Honour to the Reverend Father *Philip Serjeant*, who was of the Order of the *Minims*, and a Perſon well verſed in the Knowlege of Botany and Phyſic.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of four or more Leaves, which are placed in a circular Order: from whoſe Flower-cup ariſes the Pointal, which afterward becomes a Fruit compoſed of three Cells having three Wings, and each Cell containing one round Seed.

The *Species* are;

1. SERJANIA *ſcandens polyphylla & racemoſa. Plum. Nov. Gen.* Climbing and branching Serjania, with many Leaves.

2. SERJANIA *ſcandens enneaphylla & racemoſa. Plum. Nov. Gen.* Climbing and branching Serjania, with nine Leaves.

3. SERJANIA *ſcandens, triphylla & racemoſa. Plum. Nov. Gen.* Climbing and branching Serjania, with three Leaves.

Theſe Plants were found by the late Dr. *William Houſtoun*, at *La Vera Cruz* and *Campechy*; where they grow to a great Height, whenever they grow near large Trees to ſupport them; for they have Tendrils by which they faſten themſelves to whatever Trees grow near them.

They may be propagated either by Seeds, or from Layers; for if their Branches are laid in the Ground in the Spring, they will make good Roots before Winter; ſo may be taken off from the old Plants, and planted into ſeparate Pots.

If they are propagated by Seeds (which muſt be obtain'd from the Countries of their natural Growth, for they do not perfect them in *England*), they muſt be ſown on an Hot-bed early in the Spring; and when the Plants are come up, and are fit to tranſplant, they ſhould be each put into ſeparate Pots fill'd with freſh light Earth, and plung'd into a moderate Hot-bed of Tanners Bark, obſerving to ſhade them until they have taken new Root; after which time they ſhould have a large Share of free Air admitted to them every Day, when the Weather is warm, otherwiſe they will draw up too weak. As theſe Plants advance, their Branches muſt be ſupported by Stakes, to prevent their trailing over other neighbouring Plants; and when their Shoots are too tall to remain under the common Frames, they ſhould be ſhifted into larger Pots, and plung'd into the Bark-bed in the Stove; where they muſt be placed on the Backſide, with Granadilla's, and other climbing Plants; which ſhould be ſupported by an Eſpalier, on which they will climb to the Top of the Stove, and make a Variety, as their Leaves always remain green.

In the Summer-ſeaſon, when the Weather is warm, they ſhould have a great Share of free Air admitted to them, by drawing down the Glaſſes of the Stove every Day; but they are too tender to thrive in the open Air in *England*, even in the Middle

Middle of Summer; ſo they ſhould be conſtantly kept in the Stove, where they ſhould have a moderate Degree of Warmth in Winter; in which they will thrive better than in a greater Share of Heat.

SERPYLLUM, Mother-of-thyme.

The *Characters* are;

It hath trailing Branches, which are not ſo woody and hard as thoſe of Thyme; but in every other reſpect is the ſame.

The *Species* are;

1. SERPYLLUM *vulgare majus, flore purpureo. C. B. P.* Greater common Mother-of-thyme, with a purple Flower.

2. SERPYLLUM *vulgare minus. C. B. P.* Common ſmaller Mother-of-thyme.

3. SERPYLLUM *vulgare, flore amplo. Raii Syn.* Common Mother-of-thyme, with a large Flower.

4. SERPYLLUM *citratum. Ger. Emac.* Lemon-thyme.

5. SERPYLLUM *odore juglandis. J. B.* Mother-of-thyme ſmelling like Walnuts.

6. SERPYLLUM *vulgare hirſutum. Raii Syn.* Hairy wild Thyme.

7. SERPYLLUM *latifolium hirſutum. C. B. P.* Broad-leav'd hairy wild Thyme.

8. SERPYLLUM *vulgare minus, flore albo. C. B. P.* Greater wild Thyme, with a white Flower.

9. SERPYLLUM *vulgare majus, folio ex albo & viridi vario. H. L.* Leſſer wild Thyme, with variegated Leaves.

The eight firſt-mention'd Sorts grow wild upon Heaths, and other large open Places, in divers Parts of *England*; where, in the Summer-time, when they are in Flower, they afford an agreeable Proſpect; and being trod upon, emit a grateful aromatic Scent. Their common Places of Growth are upon ſmall Hillocks, where the Ground is dry and uncultivated; where, in a ſhort time, they propagate themſelves plentifully, both from Seeds, and by their trailing Branches, which take Root at their Joints, and extend themſelves every way.

There are but two of theſe Species commonly cultivated in Gardens; *viz.* the Lemon-thyme, and that with ſtriped Leaves; the firſt for its agreeable Scent, and the other for the Beauty of its variegated Leaves. Theſe were formerly planted to edge Borders; but as they are very apt to ſpread, and difficult to preſerve in Compaſs, they are diſuſed at preſent for that Purpoſe.

All theſe propagate themſelve, very faſt by their trailing Branches, which ſtrike out Roots from their Joints into the Earth, and thereby make new Plants; ſo that from a Root of each there may ſoon be a large Stock increas'd. They may be tranſplanted either in Spring or Autumn, and love an open Situation, and a dry undung'd Soil; in which they will thrive and flower exceedingly, and continue ſeveral Years.

It may not be improper here to take notice of a common Miſtake, which generally prevails concerning this Plant; which is, that the Sheep which feed upon this Plant, afford the ſweeteſt Mutton: whereas it is very certain, that the Sheep will not eat it; nor, ſo far as I have been capable of obſerving, is there any Animal that will, it being extremely bitter to the Taſte.

SERRATULA, Saw-wort.

The *Characters* are;

It hath a floſculous Flower, conſiſting of ſeveral Florets, divided into many Parts reſting on the Embryo, and contained in a ſcaly Empalement, like *to the greater Centaury; from which this differs in having ſmaller Heads; and from the Knapweed, in having the Borders of the Leaves cut into ſmall ſharp Segments, reſembling the Teeth of a Saw.*

The *Species* are;

1. SERRATULA *vulgaris, flore purpureo. C. B. P.* Common Saw-wort, with a purple Flower.

2. SERRATULA *flore candido. C. B. P.* Common Saw-wort, with a white Flower.

3. SERRATULA *Virginiana, foliis rigidis. Par. Bat.* Saw-wort of *Virginia*, with ſtiff Leaves.

4. SERRATULA *præalta altera, anguſto plantaginis folio. Bocc. Muſ.* The talleſt Saw-wort, with a narrow Plantain-leaf.

5. SERRATULA *præalta centauroides montana Italica. Bocc. Muſ.* The talleſt Saw-wort of the *Italian* Mountains, reſembling Centaury.

6. SERRATULA *Noveboracenſis altiſſima, foliis doriæ mollibus ſubincanis. Par. Bat.* The talleſt Saw-wort of *New-York*, with ſoft Doria-leaves, which are white on the Under-ſide.

7. SERRATULA *annua, ſemine ciliari elegantiſſimo. Boerh. Ind. alt.* Annual Saw-wort, with Seeds furniſh'd with elegant Hairs, commonly call'd *Crupina Belgarum.*

8. SERRATULA *annua, ſeminibus nitidiſſimis, ad baſin compreſſis. Hort. Chelſ.* Annual Saw-wort, with very neat Seeds, compreſſed at their Baſe.

The firſt and ſecond Sorts are pretty common in the Woods, in divers Parts of *England*; ſo are ſeldom admitted into Gardens; but as they are Plants which will grow in the cloſeſt Shade, they may be introduc'd to plant under Trees in large Plantations; where they will thrive and flower extremely well, and add to the Variety. Theſe Plants are eaſily propagated by parting of their Roots in Autumn, ſo as that they may be well-rooted before Spring: otherwiſe they will not flower very ſtrong the following Seaſon.

The third and ſixth Sorts are Natives of *North-America*, where they are very common in the Woods. Theſe are hardy Plants, and will endure the Cold of our ordinary Winters very well; but if they are planted in the full Ground, they ſhould have a moiſt light Soil; otherwiſe they will periſh in dry Weather, unleſs they are duly watered. The third Sort ſeldom riſes above two Feet high in this Country; but the ſixth Sort will ſometimes grow to the Height of five or ſix Feet, if it is planted in a moiſt rich Soil; but this laſt Sort is very late in Flowering; ſo that if the Seaſon proves cold, it many times will not flower in this Country. Theſe are both abiding Plants, which may be propagated by parting of their Roots; the beſt time for which is in the Spring, juſt before they begin to ſhoot; for as theſe continue growing in Autumn, until the Froſt puts a Stop to them, it would be dangerous to tranſplant them in Winter.

The fourth and fifth Sorts grow wild in the mountainous Parts of *Italy* and *Spain*; but are hardy enough to reſiſt the Cold of this Climate; ſo may be intermix'd with the other Sorts in Woods, or under Plantations of Trees, where they will make an agreeable Variety. Theſe Plants may be propagated by Seeds, which ſhould be ſown early in the Spring on a Border of freſh Earth; and when the Plants appear, they ſhould be carefully weeded, and, in very dry Weather, muſt be frequently water'd; which will bring them forward, and make them ſoon fit to tranſplant. When they are remov'd, they muſt be planted in a ſhady Border, about ſix Inches apart, and kept duly watered, until they have taken new Root; after which time they will require no farther Care, but to keep them clear from Weeds, till *Michaelmas*, when they ſhould be tranſplanted where they are deſign'd to remain.

The ſeventh and eighth Sorts are annual Plants, which grow about three Feet high. The Leaves of theſe Plants are very curiouſly cut into many Segments, which are fine-ſawed on their Edges: thoſe of the eighth Sort are the moſt beautiful, being cover'd with an hoary Meal, and the Seeds flatted at their Baſe.

The Flowers of theſe Plants are ſmall; ſo make no great Appearance; but the Seeds are cloſely furniſh'd on their Crowns with fine ſoft Hairs, which expand at the Top, and appear like the Hairs of a Painter's Pencil ſpread open; ſo that when the Seeds fall on the Ground, they are moved about by the leaſt Motion of the Air; and when they are laid upon Paper, it is difficult to cloſe them up; for by moving of the Paper, the Seeds are apt to creep out, by their Hairs moving each other; from whence the *Dutch* have titled the Seeds *Creepers*.

If theſe Seeds are ſown upon a Bed of light Earth in *March*, in the Place where they are to remain, they will require no other Culture, but to thin them where they are too cloſe. In *July* they will flower, and ripen their Seeds in *September*.

SESAMUM, Oily-grain.

The *Characters* are;

The Flowers are produc'd from the Wings of the Leaves, without any Foot-ſtalk: the Flower-cup conſiſts of one Leaf, divided into five long ſlender Segments: the Flower is of one Leaf, in Shape like thoſe of the Foxglove: the Pointal, which riſes in the Middle of the Flower, afterward becomes an oblong four-corner'd Pod, divided into four diſtinct Cells, which are replete with eſculent Seeds.

The *Species* are;

1. SESAMUM. *J. B.* Common Oily-grain.

2. SESAMUM *alterum, foliis triſidis, Orientale, ſemine obſcuro. Pluk. Phyt.* Another Eaſtern Oily-grain, with trifid Leaves, and dark-colour'd Seeds.

3. SESAMUM *Orientale triſidum, flore niveo. Hort. Compt.* Eaſtern Oily-grain, with trifid Leaves, and white Flowers.

Theſe three Sorts are often promiſcuouſly cultivated in the Fields of *Syria*, *Egypt*, *Candia*, &c. where the Inhabitants uſe the Seeds for Food; and of late Years the Seeds of this Plant have been introduc'd in *Carolina*, where they ſucceed extremely well. The Inhabitants of that Country make an Oil from the Seed, which will keep many Years, and not take any rancid Smell or Taſte, but in two Years becomes quite mild; ſo that when the warm Taſte of the Seed, which is in the Oil when firſt drawn, is worn off, they uſe it as Sallad-oil, and for all the Purpoſes of Sweet-oil.

The Seeds of this Plant are alſo uſed by the Negroes for Food; which Seeds they parch over the Fire, and then mix them with Water, and ſtew other Ingredients with them; which makes an hearty Food. Sometimes a ſort of Pudden is made of theſe Seeds, in the ſame manner as with Millet or Rice, and is by ſome Perſons eſteem'd; but is never uſed for theſe Purpoſes in *Europe*. This is call'd *Benny* or *Bonny* in *Carolina*.

In *England* theſe Plants are preſerv'd in Botanic Gardens, as Curioſities. Their Seeds muſt be ſown in the Spring upon an Hot-bed; and when the Plants are come up, they muſt be tranſplanted into a freſh Hot-bed, to bring them forward. After they have acquir'd a tolerable Degree of Strength, they ſhould be planted into Pots fill'd with rich light ſandy Soil, and plung'd into another Hot-bed, managing them as hath been directed for Amaranthus's; to which I ſhall refer the Reader, to avoid Repetition: for if theſe Plants are not brought forward thus in the former Part of the Summer, they will not produce good Seeds in this Country; though after they have flower'd, if the Seaſon is favourable, they may be expos'd in a warm Situation with other annual Plants. When theſe Plants have perfected their Seeds, they decay, and never continue longer than one Seaſon.

The Seed of the firſt Sort is mention'd in the Liſt of Officinal Simples in the College Diſpenſatory; but is rarely us'd in Medicine in *England*. From nine Pounds of this Seed, which came from *Carolina*, there were upwards of two Quarts of Oil produc'd; which is as great a Quantity as hath been known to be drawn from any Vegetable whatever; and this, I ſuppoſe, might occaſion its being call'd *Oily-grain*.

SESELI, Wild-ſpignel.

The *Characters* are;

It hath a roſe and umbellated Flower, conſiſting of ſeveral Leaves, plac'd in a Circle, and reſting on the Empalement, which afterward becomes a Fruit, compos'd of two long Seeds, which are chanelled: to theſe Notes muſt be added, That the Leaves are broader and ſhorter than thoſe of Fenel.

The *Species* are;

1. Seseli *perenne, folio glauco breviore. Vaill.* Perennial Wild ſpignel, with a ſhorter ſea-green Leaf.

2. Seseli *perenne, folio glauco longiori. Vaill.* Perennial Wild-ſpignel, with a longer ſea-green Leaf.

3. Seseli, *quæ ferulæ facie, Thapſia ſive Turbith Gallorum. J. B. Boerh. Ind. alt.* Wild-ſpignel with the Face of Giant-fenel, ſuppos'd to be the Turbith of the *Gauls*.

4. Seseli *quæ Saxifraga Pannonica. Cluſ. Hiſt. Boerh. Ind. alt.* Wild-ſpignel, or the *Portugal* Saxifrage of *Cluſius*.

The three firſt Sorts are abiding Plants, whoſe Roots will continue ſeveral Years; but the fourth Sort is a biennial Plant, which periſhes ſoon after it has perfected its Seeds.

Theſe may be propagated by ſowing their Seeds, which is beſt done in the Autumn; for when the Seeds are ſown in the Spring, they frequently lie in the Ground till the next Year, before the Plants will appear; whereas thoſe which are ſown in Autumn, always riſe the following Spring. Theſe Seeds ſhould be ſown in Drills, about eighteen Inches aſunder, in a Bed of freſh Earth, where they are deſign'd to remain; and in the Spring, when the Plants come up, they ſhould be thinn'd where they are too cloſe, leaving them about ſix Inches Diſtance in the Rows; after this the Plants will require no farther Care, but to keep them conſtantly clear from Weeds; and the ſecond Seaſon they will produce Seeds. Theſe Sorts, which are permitted to remain after they have ſeeded, ſhould have the Ground gently dug every Spring between the Rows, to looſen the Earth; but there ſhould be Care taken not to injure their Roots with the Spade. The Plants love a moiſt Soil; for when they are ſown on a dry Soil, they do not thrive near ſo well; and ſeldom perfect their Seeds, unleſs the Seaſon proves moiſt, or they are duly watered.

SHERARDIA.

This Name was given to this Genus of Plants by Monſieur *Vaillant*, who was Profeſſor of Botany at *Paris*, in Honour to Dr. *William Sherard*, who was the moſt famous Botaniſt of his Age.

There have been ſeveral Plants, to which this Name has been applied by various Perſons; one of which is nearly akin to the Blites; but that Plant has been ſince named *Galenia*. Another is very like the Aparine or Gooſe-graſs; ſo that there requires ſome other Epithet to be apply'd to diſtinguiſh each Genus. But as this Genus of Plants has been long eſtabliſh'd by Monſieur *Vaillant*, I have choſen to continue it under that Title, notwithſtanding Dr. *Linnæus* has join'd this to the Vervain; but as theſe have but two Seeds, and the Vervain four, they may be ſeparated.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, which is divided into five Parts at the Brim; the Upper-lip being divided into two, and the Under-lip into three Parts: the Ovary, which is at the Bottom of the Flower-cup, afterward becomes a dry Capſule, containing two oblong Seeds: to theſe Notes may be added, That the Leaves grow oppoſite by Pairs.

The *Species* are;

1. SHERARDIA *repens nodiflora. Vaill. Nov. Gen.* Creeping Sherardia, with Flowers growing in round Heads.

2. SHERARDIA *repens, folio ſubrotundo craſſo, nodiflora. Vaill. Nov. Gen.* Creeping Sherardia, with a roundiſh thick Leaf, and Flowers collected in round Heads.

3. SHERARDIA *incana nodiflora. Vaill. Nov. Gen.* Hoary Sherardia, with Flowers collected in round Heads.

4. SHERARDIA *nodiflora, ſtœchadis ſerrati folii folio. Vaill. Nov. Gen.* Round-flowering Sherardia, with a Leaf like the ſawed-leav'd Stœchas.

5. SHERARDIA *ocymi folio lanuginoſo, flore purpureo. Vaill. Nov. Gen.* Woolly Sherardia, with a Baſil-leaf, and a purple Flower.

6. SHERARDIA *teucrii folio, flore purpureo. Vaill. Nov. Gen.* Sherardia with a Tree-germander-leaf, and a purple Flower.

7. SHERARDIA *fruteſcens, teucrii folio, flore cæruleo purpuraſcente ampliſſimo. Vaill. Nov. Gen.* Shrubby Sherardia, with a Tree-germander-leaf, and a large purpliſh-blue Flower.

8. SHERARDIA *teucrii folio, flore coccineo. Vaill. Nov. Gen.* Sherardia with a Tree-germander-leaf, and a ſcarlet Flower.

9. SHERARDIA *ſpicata, folio anguſto ſerrato, flore cæruleo. Houſt.* Spiked Sherardia, with a narrow ſawed Leaf, and a blue Flower.

10. SHERARDIA *ſpicata, flore purpureo, ſeminibus majoribus, longioribus, & laxius digeſtis. Houſt.* Spiked Sherardia, with a purple Flower, and larger longer Seeds, which are looſely diſperſed in the Spike.

11. SHERARDIA *verbenæ folio ſubrotundo craſſo, floribus cæruleis, ſpica longiſſima & craſſiſſima. Houſt.* Sherardia with a thick roundiſh Vervain leaf, and blue Flowers, growing in a very long Spike.

12. SHERARDIA *foliis oblongis ſerratis, flore cæruleo, ſpica longiſſima. Houſt.* Sherardia with oblong ſawed Leaves, a blue Flower, and a very long Spike.

13. SHERARDIA *arboreſcens nodiflora, foliis rugoſis & ſerratis, flore purpureo. Houſt.* Tree-like Sherardia, with rough ſawed Leaves, and purple Flowers growing in a round Head.

The firſt of theſe Plants, being a Native of *Europe*, will thrive in the open Air in this Country. The Seeds of this Kind ſhould be ſown in the Spring, on a Bed of freſh light Earth, in a warm Situation, where the Plants are deſign'd to remain (for they do not bear tranſplanting, unleſs the Plants are very young): and when the Plants are come up, they ſhould be thinned, ſo as to leave them a Foot aſunder; and if they are kept clear from Weeds, they will require no farther Care. The Branches of this Plant trail on the Ground, and ſend forth Roots from their Joints, whereby they may be propagated; but if they are not confin'd, they will not produce many Flowers.

All the other Sorts, being Natives of the warm Parts of *America*, are too tender to thrive in the open Air in *England*; but as moſt of them are annual, they may be rais'd by ſowing of their Seeds on an Hot-bed; and if the Plants are brought forward early in the Spring, they will flower, and produce ripe Seeds before Winter,

The ſecond Sort was found by Dr. *William Houſtoun*, growing plentifully in *Jamaica*. This Plant trails its Branches on the Ground, and emits Roots from the Joints, as the former; therefore doth not produce many Flowers.

The fourth Sort was found in great Plenty at *La Vera Cruz*, by Dr. *Houſtoun*; as were the ninth, tenth, eleventh, twelfth, and thirteenth Sorts at *Campechy*, by the ſame Gentleman.

The third, fifth, and ſixth Sort grow plentifully in *Jamaica*, and ſeveral other Places in the *Weſt-Indies*; from whence I have receiv'd their Seeds.

The ſeventh Sort is a very ſpecious Plant, and therefore merits a Place in every good Collection. This produces long Spikes of large blue Flowers, which continue a long time, and make a fine Appearance. This is alſo an annual Plant, notwithſtanding it has the Epithet of Shrubby given to it; for it always flowers the ſame Summer it is rais'd: but if it is not brought forward early in the Spring, and conſtantly kept in the Stove or Glaſs-caſe, it will not perfect Seeds in this Country. The Seeds of this Kind were ſent to *England* by Mr. *Robert Millar*, Surgeon, who gather'd them near *Panama*.

The thirteenth Sort riſes to be nine or ten Feet high, and hath a woody Stem. This will abide many Years, provided it is preſerv'd in a Stove in Winter. During the Summer-ſeaſon, this Sort may be plac'd in the open Air in a warm Situation; and in hot Weather muſt be frequently water'd: but in Autumn, when the Nights grow cold, the Plants muſt be remov'd into the Stove, and in Winter they ſhould have a moderate Share of Heat; with which Management the Plants will thrive very well.

All theſe Plants are propagated by Seeds, which ſhould be ſown early in the Spring on a moderate Hot-bed; and when the Plants are come up, they ſhould be each tranſplanted into a ſeparate ſmall Pot fill'd with light rich Earth, and plung'd into a moderate Hot-bed of Tanners Bark; obſerving to ſhade them from the Sun every Day, until they have taken new Root; after which time they ſhould have a large Share of free Air admitted to them in warm Weather, and muſt be frequently water'd. When the Plants have fill'd theſe Pots with their Roots, they muſt be ſhifted into larger Pots; and if there is room for the Plants to grow under the Glaſſes of the

Hot-bed, without being ſcorched by the Sun, they ſhould be plung'd into the ſame Bed again: but if there is not room, they muſt be placed in the Stove, where they may have room to grow in Height. In *July* thoſe Sorts which are annual will begin to flower, and their Seeds will ripen the Beginning of *September*.

SICYOIDES, Single-ſeeded Cucumber.

The *Characters* are;

It hath an expanded bell-ſhap'd Flower, conſiſting of one Leaf, which is cut into ſeveral Segments at the Brim: of theſe Flowers, ſome are Male, which adhere to no Embryo; and others are Female, which reſt on the young Fruit, which is afterward inlarged to the Size of an Almond-kernel, and is flat and prickly, containing one Seed of the ſame Shape.

The *Species* are;

1. SICYOIDES *Americana, fructu echinato, foliis angulatis. Inſt. R. H. American* Sicyoides, with a prickly Fruit, and angular Leaves.

2. SICYOIDES *Americana, fructu echinato, foliis laciniatis. Plum. American* Sicyoides, with a prickly Fruit, and jagged Leaves.

Theſe Plants are preſerv'd in ſome curious Gardens, for the ſake of Variety; but as they have little Beauty, and are not uſeful, they are not much cultivated in *England*. They are both annual Plants, which may be propagated by ſowing their Seeds in the Beginning of *April*, on a Border of freſh Earth, in the Place where they are deſign'd to remain; and in about a Fortnight's time the Plants will appear; which at firſt are very like Cucumber-plants, and, as they grow, will trail on the Ground, and faſten themſelves to whatever Plants grow near them, by their Tendrils; ſo that they ſhould be either ſown near an Hedge, where they may climb up, or be allowed a conſiderable Share of room; otherwiſe they will run over the Plants which are near them. When the Plants are come up, they will require no farther Care, but to keep them clear from Weeds, and thin them where they grow too cloſe together. In *June* they will produce their Flowers, and in *Auguſt* the Seeds will ripen; which, if permitted to ſcatter, will produce a Supply of young Plants the following Spring, without any Care.

SIDERITIS, Ironwort.

The *Characters* are;

It is a Plant with a labiated Flower, conſiſting of one Leaf, whoſe Upper-lip or Creſt is upright, but the Under-lip or Beard is divided into three Parts: out of the Flower-cup riſes the Pointal, attended, as it were, by four Embryoes, which afterward turn to ſo many oblong Seeds, ſhut up in an Huſk, which was before the Flower-cup: to theſe Marks muſt be added, The Flowers growing in Whorles at the Wings of the Leaves, which are cut like a Creſt, and differ from the other Leaves of the Plant.

The *Species* are;

1. SIDERITIS *hirſuta procumbens. C. B. P.* Hairy trailing Ironwort.

2. SIDERITIS *Alpina, hyſſopi folio. C. B. P.* Hyſſop-leav'd Ironwort of the *Alps*.

3. SIDERITIS *Orientalis, phlomidis folio. T. Cor.* Eaſtern Ironwort, with a Phlomis-leaf.

4. SIDERITIS *Anglica, ſtrumoſa radice. Park. Theat. Engliſh* Ironwort, with a ſtrumoſe Root, commonly call'd *Clowns All-heal*.

5. SIDERITIS *arvenſis rubra. Park. Theat.* Narrow-leav'd All-heal or Ironwort.

6. SIDERITIS *foliis hirſutis, profunde crenatis. C. B. P.* Ironwor

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or All-heal, with hairy crenated Leaves.

7. Sideritis *Hiſpanica erecta, folia anguſtiore. Inſt. R. H.* Upright *Spaniſh* All-heal, with a narrow Leaf.

8. Sideritis *Hiſpanica crenata procumbens, flore albo, major. Inſt. R. H.* Greater trailing *Spaniſh* All-heal, with a white Flower.

9. Sideritis *Hiſpanica bituminoſa anguſtifolia crenata. Inſt. R. H.* *Spaniſh* All-heal, with a bituminous Scent, and a narrow crenated Leaf.

10. Sideritis *Hiſpanica fœtidiſſima glabra, flore purpuraſcente, & coma caneſcente. Inſt. R. H.* *Spaniſh* ſtinking ſmooth All-heal, with a purpliſh Flower, and whitiſh Tops.

11. Sideritis *Hiſpanica fruteſcens, ſeu lignoſior. Inſt. R. H.* Shrubby or more woody *Spaniſh* All-heal.

12. Sideritis *Pyrenaica hyſſopifolia minima procumbens. Inſt. R. H.* The leaſt trailing hyſſop-leav'd All-heal of the *Pyrenees.*

13. Sideritis *montana, trifido folio. Barrel. Icon.* Mountain All-heal, with a trifid Leaf.

14. Sideritis *Cretica maxima, ocymaſtri Valentini facie. Tourn. Cor.* The greater All-heal of *Candy,* with the Face of *Ocymaſtrum Valentinum.*

15. Sideritis *Cretica tomentoſa candidiſſima, flore luteo. Tourn. Cor.* The whiteſt woolly All-heal of *Candy*, with a yellow Flower.

The fourth Sort here mention'd grows plentifully by the Sides of Ditches, and in other moiſt Places, in divers Parts of *England*; ſo is very rarely introduc'd in Gardens, becauſe it is a very bad Weed wherever it once gets Place: for the Roots creep very far under-ground, and will ſoon over-run a large Spot of Ground if they are not confin'd. This Plant receiv'd the Name of *Clowns All-heal* from Mr. *Gerard*, who was looking for Herbs in *Kent*, where he ſaw a Man who had cut his Leg to the Bone with a Scythe, as he was mowing the Graſs, to whom he offer'd his Aſſiſtance to cure his Wound; which the Country-man churliſhly refuſing, crept to the Ditch-ſide, where there was plenty of this Plant growing; ſome of which he gather'd, and bruiſed, and applied it to the Wound, tying it cloſe with his Handkerchief; which in few Days healed the Wound, without any other Application; for which Reaſon *Gerard* has recorded the Story in his Herbal, for the Benefit of Mankind.

The fifth Sort is alſo a Native of *England*, and grows amongſt the Corn, or other Crops on arable Land. This is an annual Plant, which periſhes ſoon after it has ripen'd Seeds.

The other Sorts are moſt of them biennial Plants, which commonly perfect their Seeds the ſecond Summer, and ſeldom continue much longer. Theſe may be all propagated by Seeds, which ſhould be ſown in Autumn, ſoon after they are ripe; for when they are kept out of the Ground till Spring, they very often fail.

Theſe Seeds ſhould be ſown on a Bed of freſh undung'd Earth, in an open Situation; and when the Plants come up, they ſhould be thinned where they grow too cloſe; and if they are kept clear from Weeds, it is all the Culture they require. If, when theſe Plants are eſtabliſh'd in a Garden, their Seeds are permitted to ſcatter, the Plants will come up, and maintain their

Place, provided they are not overborne by large Weeds.

All the Sorts of All-heal are ſuppos'd to have an aſtringent Quality, and are accounted good to heal Wounds, and may be applied either inwardly or outwardly.

SIDEROXYLUM, Iron-wood.

The *Characters* are;

The Empalement of the Flower conſiſts of one Leaf, which is cut into five Segments: the Flower is bell-ſhaped, and divided into five Parts at the Brim: in the Centre of the Flower is ſituated the roundiſh Pointal, attended by five Stamina: *the Pointal afterward becomes a roundiſh Berry, having one Cell, containing four Seeds.*

The *Species* are;

1. Sideroxylum *inerme. Lin. Hort. Cliff.* Smooth Iron-wood.

2. Sideroxylum *foliis lanceolatis ex adverſo ſitis.* Iron-wood with ſpear-ſhap'd Leaves growing oppoſite.

3. Sideroxylum *ſpinoſum. Lin. Hort. Cliff.* Prickly Iron-wood.

The Wood of theſe Trees being very cloſe and ſolid, has given occaſion for this Name being applied to them, it being ſo heavy as to ſink in Water; and the Title of Iron-wood having been apply'd to the Wood, by the Inhabitants of the Countries where it grows, has occaſion'd the Botaniſts to conſtitute a Genus by this Name. But as the Characters of the Plants have not been ſo well examin'd as could be wiſh'd, occaſion'd by their not flowering in *Europe*, it is very probable, that the three Species here mention'd may not agree in every Part; as I think the third will not: for in ſome dried Samples of the Tree, which I have receiv'd from *America*, it appears, that this is Male and Female in different Plants, which the others are not: but as this Plant has been joined to them by other Botaniſts, I have choſen to continue it here, as I have not been able to examine the Characters myſelf.

Theſe Plants are Natives of warm Countries; ſo cannot be preſerv'd in *England*, unleſs they are placed in a warm Stove. They are propagated by Seeds, when theſe can be procured from abroad. Theſe muſt be ſown in Pots fill'd with rich light Earth, and plung'd into a good Hot-bed in the Spring, in order to get the Plants forward early in the Seaſon. When the Plants are fit to tranſplant, they ſhould be each put into a ſeparate ſmall Pot filled with good Earth, and plung'd into a freſh Hot-bed. In the Winter they muſt be plung'd into the Tan-bed in the Stove, and treated in the ſame manner as hath been directed for ſeveral tender Plants from the ſame Countries. As the Plants obtain Strength, they may be treated more hardily, by placing them in the dry Stove in the Winter, and giving them a greater Share of free Air in Summer; but they muſt not be placed abroad; for they are too tender to live in the open Air in the Summer-ſeaſon in *England*.

The firſt and ſecond Sorts I have propagated by Layers; but theſe were two Years before they had made good Roots: and ſometimes they will take from Cuttings; but this is a very uncertain Method of propagating them: nor do the Plants ſo rais'd ever grow ſo vigorouſly as thoſe which come from Seeds; ſo that when thoſe can be procur'd, it is the beſt Method to propagate them.

The firſt Sort hath large oval Leaves, ſhaped ſomewhat like thoſe of the Bay-tree; but ſmoother, and blunter at the End. Theſe are placed on the Branches without Order ; as the Branches alſo are produc'd. This rarely flowers in *England* ; but the Leaves continue all the Year green.

The ſecond Sort grows more upright and regular ; the Leaves, which are ſmaller, and more pointed, than thoſe of the firſt, are plac'd oppoſite on the Branches ; and theſe continue green through the Year.

The third Sort has pennated Leaves, which are ſomewhat like thoſe of the Maſtich-tree; and the Branches are armed with Spines, which are produc'd in Cluſters, and are ſmall. The Leaves of this Tree fall off in the Spring, a little before the new Leaves appear, when the Flowers come out ; but it has not produc'd any Flowers in *Englnad*.

SIGESBECKIA.

The *Characters* are ;

It hath compound Flowers, which have an Empalement compos'd of five narrow Leaves, which ſpread open, and extend beyond the Flower : the Hermaphrodite Flowers are tubulous, which are plac'd on the Diſk : the Female Flowers, which are ſituated on the Border, are ſtretched out like a Tongue : each of theſe are ſucceeded by one oblong narrow black Seed, which is incloſed in the Empalement.

We have but one *Species* of this Genus ; *viz.*

SIGESBECKIA. *Lin. Hort. Cliff.* Sigeſbeckia. We have no *Engliſh* Name for this Plant : this here mention'd was apply'd to it by Dr. *Linnæus*, in Honour to Dr. *Sigeſbeck*, who was Profeſſor of Botany at *Peterſburgh*.

This Plant is an Annual, periſhing at the Approach of Winter. The Seeds of it were brought from the *Eaſt-Indies*, where it is a troubleſome Weed ; but in *England* it will not produce ripe Seeds, unleſs the Plants are rais'd on an Hot-bed, and brought forward in the Spring : then they may be planted out in warm Borders the Beginning of *June* : and if they are ſupply'd with Water in dry Weather, they will grow near four Feet high, and ſend out many Branches. The Flowers are produc'd at the Extremity of the Shoots, which are ſmall, and of a yellow Colour; ſo make no great Appearance ; therefore it is only preſerv'd in the Gardens of thoſe Perſons who are curious in the Study of Plants.

SILAUM, Meadow-ſaxifrage.

The *Characters* are ;

It hath a roſe and umbellated Flower, conſiſting of ſeveral Leaves, placed circularly, and reſting upon the Empalement, which afterward becomes a Fruit compos'd of two ſhort chanell'd Seeds : to which Notes muſt be added, That the Leaves are very narrow, and the Flowers are of a pale-yellow Colour.

The *Species* are ;

1. SILAUM *quibuſdam, flore luteolo. J. B.* Common Meadow ſaxifrage.
2. SILAUM *quod liguſticum, ferulæ folio. Inſt. R. H. Boerh. Ind. alt.* Saxifrage with the Leaf of Giant-fenel.
3. SILAUM *quod liguſticum Creticum, folio fœniculi, caule nodoſo. Tourn. Cor. Boerh. Ind. Candy* Meadow-ſaxifrage, with a Fenel-leaf, and a knobby Stalk.
4. SILAUM *quod liguſticum, cicutæ folio, glabrum. Tourn. Boerh. Ind. alt.* Meadow-ſaxifrage, with a ſmooth Hemlock-leaf.

The firſt Sort is directed by the College of Phyſicians to be us'd in Medicine : this grows wild in Meadows, and other moiſt Paſtures, in divers Parts of *England*; but the other Sorts, not being Natives of this Country, are only to be met with in

Botanic Gardens; where they are preſerv'd for the ſake of Variety.

All theſe Sorts are propagated by Seeds, which may be ſown in Autumn on a Border of freſh Earth in a ſhady Situation; and when the Plants are come up, they will require no farther Care, but to keep them clear from Weeds; and, where they grow too cloſe, to thin them, ſo as to leave them about eight or ten Inches aſunder; which may be done by hoeing them, in the ſame manner as is practis'd for Carrots. Theſe Plants will flower and ſeed the ſecond Summer, and the Roots of the three firſt Sorts will abide ſome Years; but the fourth Sort commonly periſhes ſoon after it has produc'd Seed.

SILER, Seſeli or Sermountain.

The *Characters* are;

It hath a roſe and umbellated Flower, conſiſting of ſeveral Leaves, which are ranged orbicularly, and reſt on the Empalement, which becomes a Fruit compoſed of two large oblong furrowed Seeds, having foliaceous Ridges on one Side: to theſe Notes may be added, That the Lobes of the Leaves are large, long, and intire, excepting their Extremity, where they are ſlightly cut into three Parts.

The *Species* are;

1. Siler *montanum majus. Mor. Umb.* Greater Sermountain.

2. Siler *montanum anguſtifolium. Park.* Narrow-leav'd Sermountain.

The firſt Sort is uſed in Medicine, by the Direction of the College of Phyſicians. The Seeds of this Sort are the *Semen Seſeleos* of the Shops, which enters in Compoſitions; and the green Herb is alſo uſed; for which ſome of the People, who ſupply the Shops, often impoſe on their Cuſtomers the Mountain Oſier, which, by tranſlating *Siler* an Oſier, may afford them ſome Pretence.

The ſecond Sort differs from the firſt, in being ſomewhat leſs, and having narrow Leaves: this is found wild in *Auſtria*, and the former Sort grows on the *Alps* and *Apennines*, and other mountainous Parts of *Italy* and *Spain*.

Theſe Plants may be propagated by Seeds, which ſhould be ſown in Autumn, ſoon after they are ripe, on a Border of freſh undung'd Earth; and in the Spring, when the Plants will appear, they ſhould be kept conſtantly clear from Weeds; and in very dry Weather ſhould be watered, which will greatly promote their Growth. Where the Plants come up too cloſe together, they ſhould be thinned, ſo as to leave them three or four Inches apart; which will be ſufficient room for them the firſt Seaſon: and at *Michaelmas*, when their Leaves decay, ſome of the Plants may be carefully taken up, ſo as not to cut or break their Roots, and tranſplanted into a moiſt ſhady Border, about eighteen Inches aſunder, where they may remain for Continuance. If theſe Plants thrive well, they will produce Seeds the ſecond Seaſon; otherwiſe it will be the third Summer before they flower and ſeed; after which the Roots will abide many Years, and greatly increaſe in their Size, and will produce Seeds every Year.

The Culture which theſe Plants require, is only to keep them clear from Weeds; and every Spring, juſt before the Plants put out their Leaves, to dig the Ground between them gently, ſo as not to injure their Roots; and when their Flower-ſtems are advanced, to place ſome Sticks down by them, to which their Stems ſhould be faſtened with Baſs, to ſupport them from being broken down by Winds; for as theſe Stems riſe to the Height of four or five Feet, ſo, when their Umbels of Seeds are formed, which are generally pretty large and heavy, they often occaſion their Stems falling to the Ground, where they are not ſupported.

Theſe Plants flower the Latter-end of *June*; and their Seeds ripen toward the Latter-end of *Auguſt*, or the Beginning of *September*.

SILIQUA. *Vide* Ceratonia.

SILIQUASTRUM. *Vide* Cercis.

SILPHIUM, Shrubby Baſtard Chryſanthemum.

The *Characters* are;

It hath a compound Flower, compoſed of ſeveral Florets, which are included in one common ſcaly Empalement; thoſe Florets in the Middle being Hermaphrodite, which are funnel-ſhaped, and indented at the Brim: but the Border is occupied by Female Florets, which compoſe the Rays: the Hermaphrodite Flowers are barren; but the Female Flowers have each one membranaceous Seed ſucceeding them, which is ſhut up in the Empalement.

The *Species* are;

1. SILPHIUM *fruticoſum, leucoii foliis viridibus & ſplendentibus.* Shrubby Baſtard Chryſanthemum, with a green ſhining Stock-gilliflower-leaf.

2. SILPHIUM *fruticoſum, leucoii foliis ſericeis & incanis.* Shrubby Baſtard Chryſanthemum, with a white ſilky Stock-gilliflower-leaf.

3. SILPHIUM *fruticoſum anguſtifolium & incanum.* Shrubby Baſtard Chryſanthemum, with a narrow hoary Leaf.

4. SILPHIUM *fruticoſum humile, foliis leucoii latioribus minus incanis.* Dwarf Shrubby Baſtard Chryſanthemum, with broad Stock-gilliflower-leaves, which are leſs hoary.

5. SILPHIUM *herbaceum, coronæ ſolis facie.* Baſtard herbaceous Chryſanthemum, with the Appearance of Sunflower.

Theſe Plants are Natives of *America*: the firſt, third, and fifth Sorts I received from *South-Carolina*; but the ſecond Sort, which has been long in *England*, came from *Virginia*: this grows much taller than either of the other Sorts, riſing to the Height of ten or twelve Feet, with many ſlender Branches, which are garniſh'd toward their Tops with whitiſh ſilky Leaves: the Flowers are produced at the Ends of the Shoots, which are yellow: theſe make no great Appearance; ſo that the Plant is kept for the ſake of Variety, more than for its Beauty: this is too tender to live in the open Air in *England*; therefore it muſt be kept in Pots, and placed in the Green-houſe in Winter, with Myrtles, Olives, and the hardier Sorts of Green-houſe Plants, where it may have as much free Air as poſſible in mild Weather, otherwiſe the Shoots will draw up weak, and render the Plants unſightly: this Sort is apt to put out Suckers from the Root, by which it may be propagated in plenty; as alſo by Cuttings, which will eaſily take Root, if planted, during any of the Summer-months, in a ſhady Border.

The fourth Sort is alſo hardy enough to live in the Green-houſe in Winter, and may be treated in the ſame manner as the former: this creeps very much at the Root, and ſends up a great Number of young Plants, which fill the Pots; which ſhould be frequently taken off, otherwiſe they will draw away the Nouriſhment from the old Plant, and ſtarve it: this Sort ſeldom grows more than three or four Feet high; the Leaves are broader and greener than thoſe of the third Sort, and are not ſo thick. Father *Plumier* calls this Plant *Corona ſolis fruteſcens, laureolæ folio,* *ſolio*, in his Catalogue of *American* Plants: the Seeds of this Plant were ſent me from *La Vera Cruz*, by the late Dr. *William Houſtoun*.

The firſt and ſecond Sorts are ſhrubby Plants, but of humbler Growth than either of the former: theſe never riſe above two Feet high in *England*, and produce many Branches on every Side the Stem; but do not put out Suckers as the two former Sorts: the Leaves of the firſt Sort are narrow, and very thick, being full of Juice, and covered over with a mealy Powder, ſo as to be very white: the Flowers are yellow, which are produced at the Extremity of the Branches; theſe are larger than thoſe of the other two Sorts; and the Plants growing regular, and in leſs Compaſs, it deſerves a Place among other Exotic Plants.

The Leaves of the firſt Sort are much broader, and are very ſucculent, of a ſhining-green Colour; the Branches of this are ſucculent, and never become ſo woody as thoſe of the ſecond: the Flowers are ſomewhat larger; but of the ſame Shape and Colour as thoſe of that Sort.

Theſe Plants grow in *South-Carolina*, and alſo in the *Bahama-Iſlands*, from whence I have received their Seeds; but theſe are much tenderer than the other Sorts; ſo will not live through the Winter in *England*, unleſs they are placed in a warm dry Green-houſe; for if they are placed in a moiſt damp Situation, their ſucculent Branches become mouldy, and rot off in Winter; ſo that I have always found, that theſe Plants ſucceed beſt, when they are placed in a dry airy Glaſs-caſe, where there is Conveniency of Fires, in very cold, froſty, or damp Weather, to dry and warm the Air.

Theſe are propagated by Cuttings during any of the Summer-months; but theſe ſhould be planted in Pots, and plunged into a moderate Hot-bed, to promote their putting out Roots.

The fifth Sort is herbaceous: this hath an annual Stalk, and a perennial Root: the Shoots riſe near three Feet high, when they grow in a moiſt rich Soil, and produce their Flowers at the Top, which are ſhaped like thoſe of the ſmall Sunflower: theſe appear the Latter-end of *July*, and continue till *September*: the Plants are hardy; ſo will thrive in the full Ground, and may be propagated by parting of the Roots in *October*: this grows in *Virginia* in the Woods.

Theſe Plants have been ranged under the Genus of *Aſteriſcus*, by ſome Writers, and by others, under that of *Corona ſolis*; but Dr. *Linnæus* has taken them away from both, and conſtituted a Genus for them by this Title of *Silphium*; therefore I have given the *Engliſh* Name of Baſtard Sunflower to it.

SINAPI, Muſtard.

The *Characters* are;

The Flower conſiſts of four Leaves, which are placed in form of a Croſs; out of whoſe Flower-cup riſes the Pointal, which afterward becomes a Fruit or Pod, divided into two Cells by an intermediate Partition, to which the Valves adhere on both Sides, and are fill'd with roundiſh Seeds: theſe Pods generally end in a fungous Horn, containing the like Seeds: to theſe Marks muſt be added, An acrid burning Taſte, peculiar to Muſtard.

The *Species* are;

1. SINAPI *ſiliqua latiuſcula glabra, ſemine ruſo, ſive vulgare. J. B.* Common or Red Muſtard.

2. SINAPI *hortenſe, ſemine albo. C. B. P.* Garden or White Muſtard.

3. Sinapi *Indicum, lactucæ folio. Par. Bat. Indian* Muſtard, with a Lettuce-leaf.

4. Sinapi *arvenſe præcox, ſemine nigro. Mor. Hiſt.* Early Field Muſtard, with a black Seed.

5. Sinapi *Hiſpanicum pumilum album. Inſt. R. H.* Low white *Spaniſh* Muſtard.

6. Sinapi *Hiſpanicum, naſturtii folio. Inſt. R. H. Spaniſh* Muſtard, with a Creſs-leaf.

The firſt Sort is very common in the *Iſle of Ely* in *Cambridgeſhire*, and in many other Places, where the Land has been flooded with Water for many Years; but upon being drained, this Plant comes up in a moſt plenteous manner; which has given Occaſion for ſome Perſons to imagine, that it was produced ſpontaneouſly without Seeds; but the contrary of this has been fully proved by ſeveral learned Gentlemen, and therefore would be needleſs to repeat here; for the Reaſon why theſe Seeds remain good for ſo many Years, when cover'd with Water, is, becauſe they abound with ſo ſharp an Oil, that it prevents the Water from prevading its Body; and, being kept from the Air, is preſerved from Corruption.

This Sort is alſo cultivated in Gardens, as a Sallad-herb, by ſome Perſons; tho' in general the Sort with white Seeds is preferr'd to it for this Purpoſe; and in Fields, in divers Parts of *England*, for the ſake of its Seeds. The Method of cultivating this Plant is, to ſow the Seeds upon an open Spot of Ground, which has been well dug or plow'd, in the Spring; and when the Plants are come up, they ſhould be hoed, in order to deſtroy the Weeds, as alſo to cut out the Plants where they are too thick, leaving them about ten Inches aſunder; for when they are left too thick, they draw up weak, and the Seeds are never ſo large, and well nouriſhed; and if the Weeds ſhould grow again before the Plants have gotten Strength enough to bear them down, they muſt be hoed a ſecond time; after which they will require no farther Care, until the Seeds are ripe, when the Haulm ſhould be cut down, and ſpread upon the Ground to dry; but it muſt not lie long on the Ground; for the Pods will ſoon open, and let out the Seeds, eſpecially after a Shower of Rain, if the Sun ſhines warm; therefore the Seeds ſhould be threſh'd out as ſoon as poſſible.

The ſecond Sort is chiefly cultivated in Gardens, for a Sallad-herb in the Winter-ſeaſon. The Seeds of this are commonly ſown very thick in Drills, either upon a warm Border, or in very cold Weather upon an Hot-bed, with Creſſes, and other ſmall Sallad-herbs, which are commonly fit for Uſe in ten Days or a Fortnight from ſowing; for if they are large, they are too ſtrong to put into Sallads. In order to ſave the Seeds of this Plant, a Spot of Ground muſt be ſown with it in the Spring, which ſhould be managed in the ſame manner as the former.

The third Sort may alſo be uſed in Sallads, when it is very young, at which time it has no diſagreeable Taſte; but as it grows large, ſo its Strength increaſes, and a certain Bitterneſs, which renders it very diſagreeable. This is very hardy, and, when allow'd ſufficient room, will ſpread very far, and produce large Leaves. This Sort is eaten by the *Chineſe*, as a boiled Sallad-herb; and the Seeds have been frequently brought to *Europe*, for an eſculent Herb.

The Seeds of the two firſt Species are order'd for medicinal Uſe; but the third Sort is ſeldom cultivated for Uſe in *England*.

The fourth Sort is a pretty common Weed on arable Lands, in moſt Parts of *England*: this comes up early in the Spring, among the Corn; ſo flowers and ſeeds in *May*: therefore where it is not weeded out, the Seeds will ſcatter long before the Corn is ripe, and the Ground will be ſtock'd with the Weed: the Leaves of this Sort are large, and, for the moſt part, intire: the Flowers are yellow; and it is generally taken for Charlock, by moſt Country-people.

It is from the Seeds of this Sort that the *Durham* Flower of Muſtard-ſeed is made; and it is there cultivated for this Purpoſe.

The fifth and ſixth Sorts are preſerved in the Gardens of ſome Perſons, who are curious in Botany, for the ſake of Variety; but they are not cultivated for Uſe.

SINAPISTRUM, Baſtard Muſtard.

The *Characters* are;

The Flower conſiſts of four Leaves, which are placed in form of a Croſs, but are erected: under theſe Petals are placed ſix Stamina, *which occupy the under Part of the Flower; out of whoſe Flower-cup riſes the Pointal; which afterward becomes a cylindrical Pod, with two Valves, and fill'd with roundiſh Seeds.*

The *Species* are;

1. SINAPISTRUM *Indicum pentaphyllum, flore carneo, minus non ſpinoſum. H. L.* *Indian* five-leav'd Sinapiſtrum, with a fleſh-colour'd Flower, and not prickly.

2. SINAPISTRUM *Ægyptiacum heptaphyllum, flore carneo, majus ſpinoſum. H. L.* Greater prickly ſeven-leav'd *Egyptian* Sinapiſtrum, with a fleſh-colour'd Flower.

3. SINAPISTRUM *Zeylanicum triphyllum & pentaphyllum viſcoſum, flore flavo. Boerh.* Three and five-leav'd viſcous Sinapiſtrum from *Ceylon*, with a yellow Flower.

4. SINAPISTRUM *Luſitanicum triphyllum, flore rubro, ſiliquis corniculatis. H. L.* Three-leav'd *Portugal* Sinapiſtrum, with an horned Pod.

5. SINAPISTRUM *Orientale triphyllum, ornithopodii ſiliquis. Tourn. Cor.* Three-leav'd Eaſtern Sinapiſtrum, with Birds-foot-pods.

The firſt and ſecond Sorts are very common in *Jamaica*, *Barbados*, and other warm Countries in the *Weſt-Indies*; but the third Sort I received from Dr. *Boerhaave*, who had it from *Ceylon*, with many other curious Seeds.

Theſe Plants are preſerved as Curioſities by thoſe who delight in Botanic Studies; but as they are not very beautiful, nor of any great Uſe, they are rarely cultivated in other Gardens. They are annual Plants, which periſh ſoon after their Seeds are ripe; and in *England* muſt be raiſed in an Hot-bed in the Spring; and when the Plants have acquired Strength, they ſhould be planted into Pots, and managed as hath been directed for the Female Balſamines; to which Article the Reader is deſired to turn, to avoid Repetition. In *July* theſe Plants may be placed in the open Air, at which time they will flower; and in *September* their Seeds will ripen; when they ſhould be gather'd, and preſerv'd in their Pods, until the Seaſon for ſowing them.

The fourth and fifth Sorts will thrive in the open Air; ſo the Seeds of this may be ſown on a Bed of light Earth in *April*, where the Plants are to remain; and will require no other Culture, but to keep them clear from Weeds: in *June* they will flower, and the Seeds will ripen in *Auguſt*; and the Plants will ſoon after periſh.

SISARUM, Skirret.

The *Characters* are;

It produces its Flowers in an Umbel, which conſiſt of ſeveral Leaves placed circularly, and expand in form of a Roſe: the Empalement afterward becomes a Fruit, compoſed of two narrow Seeds, that are gibbous and furrow'd on one Side, but plain on the other: to theſe Marks muſt be added, That the Roots are ſhaped like long Turneps, and are joined to one Head.

We have but one *Species* of this Plant; *viz.*

Sisarum *Germanorum*. *C. B. P.* Skirret.

This is one of the wholſomeſt and moſt nouriſhing Roots that is cultivated in Gardens; and yet it is at preſent very rare to meet with it in the Gardens near *London*: what may have been the Cauſe of its not being more commonly cultivated, I can't imagine, ſince there are many Kitchen-gardens which are proper for this Plant.

It may be propagated two ways; *viz.* either by ſowing the Seeds, or planting the Slips. The former Method is what I would chiefly recommend; becauſe the Roots which come from Seeds are much larger than thoſe produced from Off-ſets, and are much tenderer. The Seaſon for ſowing the Seed is in the Beginning of *April*, and upon a moiſt rich Soil, which ſhould be well dug and looſened; and being laid level, the Seeds ſhould be ſown thereon, and then trod in, after the common Method of ſowing Radiſhes, raking the Ground over them ſmooth.

In *May* the Plants will come up, at which time the Ground ſhould be hoed over, as is practiſed for Carrots, to deſtroy the Weeds, and to cut out the Plants where they are too cloſe, leaving them the firſt Hoeing about three Inches aſunder; but at the ſecond Hoeing, which ſhould be performed about a Month after the firſt, they ſhould be cut out to ſix Inches apart at leaſt, obſerving to cut down all the Weeds; and, during the Summer-ſeaſon, the Weeds ſhould be diligently hoed down, as faſt as they are produc'd; for if theſe Plants are ſtifled by Weeds, &c. they ſeldom come to good.

When their Leaves are decay'd, their Roots may be taken up for Uſe; but this ſhould be done only as they are wanted; for if they are kept long above-ground, they will be good for little. The Leaves commonly decay in *October*; ſo that from that time, till the Beginning of *March*, when they begin to ſhoot again, they are in Seaſon; but after they have ſhot forth green Leaves, the Roots become ſticky, and are not ſo good.

The Method of propagating this Plant from Off-ſets is as follows: About the Latter-end of *February*, or Beginning of *March*, you ſhould dig a moiſt rich Spot of Ground, in Size proportionable to the Quantity of Plants intended; then you ſhould carefully dig up the old Roots, from which you ſhould ſlip off all the Off-ſets, preſerving their Buds on the Crown of each intire; after this you ſhould open a Drill croſs the Spot of Ground with a Spade, in a ſtrait Line, about eight or nine Inches deep; into which you ſhould place the Off-ſets, about ſix Inches apart, as upright as poſſible; then fill the Drill up again with the Earth which came out of it; and at a Foot Diſtance from the firſt, make another Trench, laying the Off-ſets therein, as before; and ſo continue the Drills at a Foot Diſtance, thro' the whole Spot of Ground; and if the Seaſon ſhould prove very dry, it will be proper to water them until they have taken Root in the Ground; after which they will require no other Care, but to keep the Weeds conſtantly deſtroyed as they are produced, in the manner before directed for the ſeedling Plants; and when their Leaves decay, they will be fit for Uſe, as before; but after any of theſe Roots have ſeeded, they are ſticky, and good for nothing; ſo that the Off-ſets ſhould never be taken from Plants more than one Year old.

SISYMBRIUM, Water-creſſes.

The *Characters* are;

It hath a Flower compoſed of four Leaves, which are placed in form of a Croſs; out of whoſe Empalement riſes the Pointal, which afterward becomes a Fruit or Pod, which is divided into two Cells, by an intermediate Partition; to which the Valves adhere on both Sides, and furniſhed with Seeds that are roundiſh: to theſe Marks muſt be added, That the whole Appearance of the Plants is peculiar to the Species of this Genus.

The *Species* are;

1. SISYMBRIUM *aquaticum. Matth.* Common Water-creſſes.
2. SISYMBRIUM *aquaticum, foliis minoribus, præcocius. Raii Syn.* Early-flowering Water-creſſes, with ſmaller Leaves.
3. SISYMBRIUM *aquaticum, raphani folio, ſiliqua breviori. Inſt. R. H.* Water-radiſh.
4. SISYMBRIUM *aquaticum, foliis in profundas lacinias diviſis, ſiliqua breviori. Inſt. R. H.* Water-radiſh with deeply jagged Leaves.
5. SISYMBRIUM *paluſtre repens, naſturtii folio. Inſt. R. H.* Water-rocket.
6. SISYMBRIUM *paluſtre minus, ſiliqua aſpera. Inſt. R. H.* The leſſer Marſh-rocket, with a rough Pod.
7. SISYMBRIUM *erucæ folio glabro, flore luteo. Inſt. R. H.* Common Winter-creſs.
8. SISYMBRIUM *erucæ folio glabro, flore pleno. Inſt. R. H.* Winter-creſs with a double Flower.
9. SISYMBRIUM *erucæ folio glabro, minus & præcocius. Inſt. R. H.* Small early-flowering Winter-rocket
10. SISYMBRIUM *erucæ folio aſpero, flore luteo. Inſt. R. H.* Winter-creſs with a rough Rocket-leaf, and a yellow Flower.

The firſt and ſecond Sorts of Water-creſſes grow promiſcuouſly in ſtanding Waters in moſt Parts of *England*, and are indifferently gathered for Uſe. Theſe Plants have of late Years been generally uſed as Sallad-herbs in the Spring of the Year, and are by many People preferr'd to all other Sorts of Sallads, for the agreeable warm bitter Taſte; and being accounted an excellent Remedy for the Scurvy, and to cleanſe the Blood, as alſo a good Diuretic, they have generally obtained with moſt People. Theſe are generally gathered in the Ditches, and in other ſtanding Waters near *London*, to ſupply the Markets; but whoever hath a mind to cultivate them, may eaſily do it, by taking ſome of the Plants from the Places of their natural Growth, early in the Spring, being careful to preſerve their Roots as intire as poſſible, and plant them into Mud, and then let the Water in upon them by degrees. When they have taken Root, they will ſoon flouriſh, and ſpread over a large Compaſs of Water: they ſhould not be cut the firſt Seaſon, but ſuffered to run to Seed, which will fall into the Water, and furniſh a ſufficient Supply of Plants afterward.

But where the Water is ſo deep, that it will not be eaſy to plant them, the beſt Method will be to get a Quantity of the Plants, juſt as their Seeds are ripening, and throw them on the Surface of the Water, where they are deſign'd to grow; and their Seeds will ripen, and fall to the Bottom, where they will take Root, and produce a Supply of the Plants. Theſe Plants produce Seed the Latter-end of *June*, or the Beginning of *July*, which is the proper Time for this Work.

The third, fourth, fifth, and ſixth Sorts are Water-plants, which grow in ſtanding Waters; but are not admitted into Gardens, except for the ſake of Variety.

The ſeventh and ninth Sorts grow wild on dry Banks in ſeveral Parts of *England*: theſe were formerly uſed as a Winter Sallad; but ſince there have been a great Number of other Herbs introduced into the *Engliſh* Gardens, they have been intirely rejected. Theſe may be propagated by Seeds, which ſhould be ſown ſoon after they are ripe; and when the Plants are come up, they ſhould be hoed, to ſeparate them where they are too cloſe, as alſo to deſtroy the Weeds, which is all the Culture they require. The Summer following they will produce Seed, and the Plants periſh ſoon after. But if the Seeds are permitted to ſcatter, the Plants will come up, and become troubleſome Weeds.

The eighth Sort is a Variety of the ſeventh, which accidentally aroſe from Seeds; and is preſerved in ſome curious Gardens, for having a double Flower. This is propagated by parting the Roots; ſo that in order to preſerve the Kind, the Plants ſhould not be ſuffered to ſend forth too many Flower-ſtems, leſt they ſhould exhauſt the Root too much to ſend forth any Side-heads for parting. The beſt time to tranſplant and part theſe Roots is at *Michaelmas*, when they ſhould be planted into a Bed or Border of freſh undunged Earth, in an open Expoſure.

The tenth Sort is very like the ſeventh, from which it differs in having a rough Leaf; but may be cultivated in the ſame manner; tho' theſe are rarely allowed a Place in any Gardens, unleſs for the ſake of Variety.

SISYRINCHIUM, *Spaniſh* Nut.

The *Characters* are;

It hath a Flower reſembling the Iris, *from which it differs in having a double Root, one lying over the other, after the ſame manner as thoſe of the Crocus and Gladiolus.*

The *Species* are;

1. SISYRINCHIUM *majus, flore lutea macula notato. C. B. P.* Greater *Spaniſh* Nut, with a Flower mark'd with a yellow Spot.

2. SISYRINCHIUM *majus, flore alba macula notato. C. B. P.* Greater *Spaniſh* Nut, with a Flower mark'd with a white Spot.

3. SISYRINCHIUM *medium. C. B. P.* Middle *Spaniſh* Nut.

4. SISYRINCHIUM *Creticum montanum, anguſtiſſimo folio. Tourn. Cor.* Mountain Siſyrinchium of *Candy*, with a very narrow Leaf.

5. SISYRINCHIUM *Africanum, foliis longiſſimis, flore albo, radice venenata. African* Siſyrinchium, with very long Leaves, a white Flower, and a poiſonous Root.

The three firſt Sorts grow wild in *Portugal* and *Spain*, where the Roots are ſought after, and dug up by Children, and the Shepherds, who eat them, as alſo the Hogs; for they are ſweet, and in Taſte reſemble the Earth-nut. The fourth Sort was diſcovered, in the Iſland of *Crete* by Dr. *Tournefort*, who ſent it to the Royal Garden at *Paris*.

Theſe Plants are preſerved by the Curious, for the ſake of Variety; for they make no great Appearance: the time of their flowering is commonly in *May*, or the Beginning of *June*, about the ſame time with the Bulbous Iris: the Flowers come out alternately from their Sheaths or Coverings, after the manner of the Iris; ſo that there is ſeldom more than one Flower open upon each Stalk at one time; but they ſucceed each other; for there are commonly four or five Flowers produced on each Stalk, when the Roots are ſtrong: theſe Flowers are in ſome of a fine blue Colour, ſpotted with yellow; and in other Sorts they are of a pale-purple Colour, ſpotted with White: but the Flowers ſeldom continue a whole Day open; but cloſe up when the Sun is warm.

The four firſt Sorts are hardy Plants, which are multiplied by Off-ſets, and may be treated in the ſame manner as the Bulbous Iris; to which the Reader is deſired to turn; where there are full Directions exhibited, both for the propagating them by Off-ſets and Seeds; with which Management theſe Flowers may be cultivated.

The fifth Sort was brought from *Africa*, where the Inhabitants uſe the Root to fuddle the Fiſh in the Rivers, in order to catch them in plenty. The green Leaves of this Sort are poiſonous; for as a Tub of theſe Plants, which were bringing to *England*, was plac'd on the Deck of the Ship, ſome Hogs, getting to it, eat down all the Leaves; which ſwelled two of the Hogs, and killed them.

This Plant, being a Native of a warm Country, is too tender to live in this Climate, unleſs it is preſerved in a good Stove; for which Reaſon the Roots ſhould be planted into Pots filled with light rich Earth, and plunged into the Bark-bed in the Stove; which if it is preſerved in a kindly Warmth, the Roots will greatly multiply. The Leaves of this Sort die away in Winter, and new ones ariſe in the Spring: wherefore the beſt time to tranſplant the Roots is, juſt before they put out new Leaves, which is commonly in the Beginning of *April*; at which time the Bark-bed ſhould be ſtirred up, and renewed with ſome freſh Tan; and the Pots muſt be plunged again, and frequently refreſhed with Water in warm Weather; which will make them grow very vigorous: but during the Winter-ſeaſon, while the Leaves are decay'd, they muſt not have much Wet, leſt it rot the Roots. Altho' this Plant thrives very well in *England*, yet it has but once flowered here; and then but one Flower appeared, which ſoon decayed.

SIUM, Water-parſnep.

The *Characters* are:

It hath a roſe-ſhaped umbellated Flower, conſiſting of ſeveral Petals, which are commonly equal, and placed orbicularly, reſting upon the Empalement; which afterward becomes a roundiſh Fruit, compoſed of two Seeds, which are gibbous and furrowed on one Side, but plain on the other: to theſe Notes muſt be added, That the Leaves are joined together, and adhere to the Rib, with an odd Lobe at the End.

The *Species* are;

1. Sium *ſive Apium paluſtre, foliis oblongis. C. B. P.* Water-parſnep, with oblong Leaves.

2. Sium *umbellatum repens. Ger. Emac.* Creeping Water-parſnep.

3. SIUM *latifolium. C. B. P.* Broad-leav'd Water-parſnep.

4. SIUM *paluſtre alterum, foliis ſerratis. Inſt. R. H.* Another Water-parſnep, with ſawed Leaves.

5. SIUM *foliorum conjugationibus laciniatis. Inſt. R. H.* Water-parſnep with the Wings of the Leaves jagged.

6. SIUM *aquaticum, ad alas floridum. Mor. Umb.* Water-parſnep with Flowers growing at the Wings of the Leaves.

7. SIUM *minimum umbellatum, foliis variis. Pluk. Alm.* The leaſt Water-parſnep, with variable Leaves.

8. SIUM *alterum, oluſatri facie. Lob. Icon.* Long-leav'd Water-hemlock.

9. SIUM *arvenſe, ſive ſegetum. Inſt. R. H.* Corn-parſley or Honewort.

10. SIUM *aromaticum, Siſon officinarum. Inſt. R. H.* Stone-parſley, or *German* Amomum.

The firſt, ſecond, third, ſeventh, and eighth Sorts grow pretty common in Ditches, Ponds, and other ſtanding Waters, in divers Parts of *England*; but are not cultivated, becauſe they will not live on dry Ground. The ſecond Sort is directed to be uſed in Medicine by the College of Phyſicians, and is eſteemed very good in ſcrophulous Caſes. The firſt Sort is by ſome People miſtaken for Water-creſſes, and is ſometimes gathered as ſuch, and eaten, tho' they are very differnt Plants.

The eighth Sort is a very poiſonous Plant, which was by Dr. *Wepfer* taken for the Hemlock of the Antients; who has written a Treatiſe of this Plant, in which he has mentioned a Number of Inſtances of the noxious Quality thereof: ſo that it ſhould be extirpated from Places near Habitations, in order to prevent any Miſchief which may happen by Perſons uſing it thro' Ignorance.

The fourth, fifth, and fixth Sorts grow in ſtanding Waters in *France*, *Germany*, and ſome other Parts of *Europe*; but are not Natives of this Country. Theſe are ſometimes preſerved in Botanic Gardens, for Variety-ſake; and are not uſed in Medicine.

The ninth and tenth Sorts grow on dry Banks, and under Hedges, in ſeveral Parts of *England*; but are rarely cultivated in Gardens. The ninth Sort has been by ſome Writers greatly eſteemed for diſcuſſing hard Swellings of the Face; which by ſome Country-people are called Hones; wherefore the Name of Honewort was given to this Plant, on account of that Quality. The Seeds of the tenth Sort are uſed in Medicine, as one of the leſſer warm Seeds. This is called *Amomum* by the *Germans*, tho' it is not what the Antients meant by that Name.

All theſe Sorts may be cultivated by Seeds, which ſhould be ſown in Autumn ſoon after they are ripe: thoſe Sorts which grow in ſtanding Waters, muſt be ſcattered into ſuch Places; but the other Sorts may be ſown on a ſhady Border, where the Plants will come up in the Spring, and require no farther Care, but to keep them clear from Weeds; and where they grow too cloſe together, to thin them, ſo as to allow them room to grow. The ſecond Year theſe Plants will produce Flowers and Seeds; ſoon after which the Roots will periſh.

SMALLAGE. *Vide* Apium.

SMILAX, Rough Bindweed.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are placed circularly, *and expand in form of a Roſe, whoſe Pointal afterward becomes a Fruit, or ſoft roundiſh Berry, containing oval-ſhaped Seeds.*

The *Species* are;

1. Smilax *aſpera, fructu rubente. C. B. P.* Rough Bindweed, with a red Fruit.

2. Smilax *viticulis aſperis, foliis longis anguſtis mucronatis lævibus, auriculis ad baſim rotundioribus. Pluk. Phyt.* Rough Bindweed, with long narrow-pointed ſmooth Leaves, having round Ears at the Baſe.

3. Smilax *viticulis aſperis, Virginiana, folio hederaceo lævi, Zarza nobiliſſima nobis. Pluk. Phyt.* Rough *Virginian* Bindweed, with a ſmooth Ivy-leaf, commonly called *Zarzaparilla.*

4. Smilax *Orientalis, ſarmentis aculeatis, altiſſimas arbores ſcandentibus, foliis non ſpinoſis. Tourn. Cor.* Eaſtern rough Bindweed, with prickly Shoots, and ſmooth Leaves.

5. Smilax *lævis, lauri folio, baccis nigris. Cateſb. Hiſt. Nat. Carol.* Smooth Bindweed, with a Bay-leaf, and black Berries.

6. Smilax *non ſpinoſa humilis, foliis ariſtolochiæ, baccis rubris. Cateſb. Hiſt. Nat. Car.* Dwarf ſmooth Bindweed, with a Birthwort-leaf, and red Berries.

7. Smilax *bryoniæ nigræ foliis, caule ſpinoſo, baccis nigris. Cateſb. Hiſt. Nat. Carol.* Bindweed with black Bryony-leaves, a prickly Stalk, and black Berries.

8. Smilax *Caroliniana, ſtipite quadrato leni, foliis anguſtis aſperis, auriculis ad baſim anguloſis. Pluk. Phyt. Carolina* Bindweed, with ſquare ſmooth Shoots, and rough narrow Leaves, which have cornered Ears at their Baſe.

9. Smilax *foliis latis, in margine ſpinoſis, Caroliniana, ſtipite leni quadrato. Pluk. Phyt. Carolina* Bindweed, with broad Leaves, having Spines on their Edges, and a ſmooth ſquare Shoot.

10. Smilax *aſpera Bermudenſis, grandioribus foliis cordiformibus, radice ſurculoſa. Pluk. Phyt.* Rough Bindweed of *Bermudas,* with larger heart-ſhaped Leaves, and a Root full of Shoots.

11. Smilax *claviculata, hederæ folio, tota lævis, e Terra Mariana. Pluk. Phyt.* Smooth Bindweed, with Tendrils, and an Ivy-leaf, from *Maryland.*

12. Smilax *viticulis aſperis, Virginiana, foliis anguſtis lævibus, nullis auriculis prædita. Pluk. Phyt. Virginian* Bindweed, with rough Shoots, and ſmooth narrow Leaves, having no Ears.

13. Smilax *Virginiana, ſpinis innocuis armata, latis canellæ foliis, radice arundinacea craſſa & carnoſa. Pluk. Phyt. Virginian* Bindweed, armed with innocent Spines, broad Cinnamon-leaves, and a thick fleſhy Root, call'd baſtard *China.*

14. Smilax *Americana lævis, canellæ foliis, baccis rubris.* Smooth *American* Bindweed, with Cinnamon-leaves, and red Berries.

15. Smilax *aſpera Americana, ariſtolochiæ foliis longioribus, ad baſim auriculatis.* Rough *American* Bindweed, with longer Birthwort-leaves, with Ears at their Baſe, whoſe Root is the *Zarzaparilla* of the Shops.

16. Smilax *Americana lævis, tamni folio, claviculis longioribus donato.* Smooth *American* Bindweed, with a black Bryony-leaf, ſending forth long Tendrils.

17. Smilax *Americana lævis, latiſſimo folio, auriculis ad baſim rotundioribus.* Smooth *American* Bindweed, with a very broad Leaf, having round Ears at the Baſe.

18. Smilax *unifolia humillima.*

Inſt. R. H. The loweſt Bindweed or One-blade.

Theſe Plants are preſerved in the Gardens of ſuch as are curious in Botany, for their Variety; but there is no great Beauty or Uſe in them; ſo that they are not very commonly cultivated in other Gardens.

The fourth Sort here mentioned was diſcovered by Dr. *Tournefort* in the *Levant*. This is a very rambling Plant, which climbs up Trees, and riſes to a great Height in the Places of its natural Growth; but is an humbler Plant in this Country. This may be propagated by Seeds, or from Off-ſets taken from the old Roots; and is hardy enough to live in the open Air in this Country, provided it is planted under Trees, where it may be a little protected in Winter.

The firſt, ſecond, third, fifth, ſixth, ſeventh, eighth, ninth, eleventh, twelfth, and thirteenth Sorts are Natives of *Carolina*, *Virginia*, and the other Northern Parts of *America*, where they grow in the Woods in the greateſt Shade. Theſe may alſo be propagated by Seeds, or Off-ſets from the old Roots, as the former. Moſt of theſe Plants are preſerved in Pots in the Gardens of the Curious; but they will endure the Cold of our Winters in the open Air very well, and may be rendered ornamental by planting them under Trees in Wilderneſs-quarters, where they will fill up and cover the Ground; and may be diſpoſed ſo as to make an agreeable Variety. Theſe Plants require a Soil rather moiſt than dry; and if it be tolerably light, they will thrive much better than in a very ſtrong one.

The tenth, fourteenth, fifteenth, ſixteenth, and ſeventeenth Sorts are Natives of the warmer Parts of *America*; ſo are more tender than either of the former. Theſe Sorts were diſcovered at *Campechy* by Mr. *Robert Millar*, Surgeon, who ſent Samples of them to *England*; the Root of the fifteenth Sort is the *Zarzaparilla*, which is directed by the College of Phyſicians to be uſed in Medicine.

Theſe Sorts are propagated by Seeds or Off-ſets, in the ſame manner as thoſe before-mentioned; but theſe muſt be preſerved in Pots, and ſheltered in Winter, otherwiſe they will not live in this Country. As theſe Plants rarely produce Seeds in *England*, they are commonly increaſed by parting their Roots; the beſt time for doing of this is in *March*, juſt before they ſend forth new Shoots from their Roots; for although the old Shoots abide, and retain their Leaves throughout the Year, yet there are every Spring new Shoots ſent forth from their Roots, which come up like the ſmall Shoots of Aſparagus, with a naked Stem; but afterward they ſend forth Side-branches, which are beſet with Leaves. Some of theſe Sorts greatly multiply by their creeping Roots, which will extend to a great Diſtance, provided they are not confin'd; but when they extend their Roots very far, they ſeldom produce very ſtrong Shoots; nor do they make ſo good an Appearance as when they grow cloſe and thick.

When the Seeds of theſe Plants are obtained from abroad, they ſhould be ſown in Pots filled with freſh light Earth, and plunged into a moderate Hot-bed, obſerving to water the Earth frequently to keep it moiſt; becauſe the Seeds, being hard, will not vegetate without a conſiderable Share of Moiſture; and many times remain in the Ground a whole Year, before they grow: ſo that if the Plants do not come up the firſt Seaſon, the Pots ſhould be kept clean from Weeds all the Summer; and in Winter they ſhould be ſheltered from Froſt under a common Frame; the following Spring they muſt be again plunged into the Hot-bed, which will bring the Plants up very ſoon. When the Plants are come up, they muſt be conſtantly kept clear from Weeds, and frequently watered in warm Weather; and toward the End of *May* they ſhould be enured to the open Air by degrees; and in *June* they may be removed out of the Bed, and placed abroad in a ſheltered Situation, where they ſhould remain till the Froſt comes on in Autumn; when they muſt be removed into Shelter. Theſe Plants ſhould remain untranſplanted in the Seed-pots, till the following Spring, when they ſhould be turned out of the Pots, and carefully ſeparated: the tender Sorts ſhould be planted in Pots fill'd with freſh Earth; and if they are plunged into a very temperate Hot-bed, it will cauſe them to take new Root very ſoon, and greatly ſtrengthen the Plants. But the hardy Kinds may be planted abroad under Trees, where (if they are kept clear from Weeds, until they have obtained ſufficient Strength to overbear the Weeds) they will make an agreeable Variety, amongſt other hardy Wood-plants.

The eighteenth Sort dies to the Root every Year, and riſes in the Spring: it is a very humble Plant, ſeldom riſing above four Inches high: this increaſes by its creeping Root; for it rarely produces Seeds in this Country. It is a very hardy Plant, and grows in Woods; but it is not a Native of *England*. I obſerved it growing plentifully in a Wood near the *Hague*, in a moiſt light ſandy Soil; ſo that whoever would cultivate this Plant, ſhould plant it in ſuch Situations. The beſt time to tranſplant this Plant is in the Autumn, when the Leaves are decay'd.

SMYRNIUM, Alexanders.

The *Characters* are;

The Flowers are produced in Umbels, conſiſting of ſeveral Leaves, which are placed orbicularly, and expand in form of a Roſe: theſe reſt upon the Empalement, which afterward becomes an almoſt globular Fruit, compoſed of two pretty thick Seeds, ſometimes ſhaped like a Creſcent, gibbous, and ſtreak'd on one Side, and plain on the other.

The *Species* are;

1. SMYRNIUM. *Matth.* Common Alexanders.
2. SMYRNIUM *peregrinum, rotundo folio. C. B. P.* Foreign Alexanders, with a round Leaf.
3. SMYRNIUM *peregrinum, folio oblongo. C. B. P.* Foreign Alexanders, with an oblong Leaf.
4. SMYRNIUM *Creticum, paludapii foliis. T. Cor. Candy* Alexanders, with a Smallage-leaf.

The firſt of theſe Sorts (which is that order'd by the College for medicinal Uſe) grows wild in divers Parts of *England*, and at preſent is ſeldom cultivated in Gardens; tho' formerly it was greatly uſed in the Kitchen, before Celery was ſo much cultivated, which hath taken place of Alexanders, in moſt Peoples Opinion. The other Sorts are preſerved in Botanic Gardens for Variety; but may either of them be cultivated for the Uſe of the Kitchen. The ſecond Sort is much preferable to the firſt for blanching, as I have tried; and will be tenderer, and not quite ſo ſtrong.

All theſe Plants may be propagated by ſowing their Seeds upon an open Spot of Ground in *Auguſt*, as ſoon as they are ripe; for if they are preſerved till Spring, they often miſcarry, or at leaſt do not come up until the ſecond Year; whereas thoſe ſown in Autumn rarely fail of coming up ſoon after *Chriſtmas*, and will make much ſtronger Plants than the other.

In the Spring theſe Plants ſhould be hoed out, ſo as to leave them ten Inches or a Foot apart each Way; and, during the following Summer, they muſt be conſtantly clear'd from Weeds, which, if permitted to grow amongſt them, will draw them up ſlender, and render them good for little. In *February* following the Plants willl ſhoot up again vigorouſly; at which time the Earth muſt be drawn up to each Plant, to blanch them; and in three Weeks after, they will be fit for Uſe; when they may be dug up, and the white Part preſerved, which may be ſtew'd, and eaten as Celery.

SNAP-DRAGON. *Vide* Antirrhinum.

SNEEZEWORT. *Vide* Ptarmica.

SNOWDROP. *Vide* Galanthus.

SOLANOIDES, Baſtard Nightſhade.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of five Leaves, whoſe Pointal afterward becomes a roundiſh Fruit, having one hard Seed, which is cover'd with a thin Pulp, ſo as to have the Appearance of a Berry.

The *Species* are;

1. SOLANOIDES *Americana, circeæ foliis caneſcentibus. Tourn. American* Solanoides, with hoary Inchanters-nightſhade-leaves.

2. SOLANOIDES *Americana, circeæ foliis glabris. Tourn. American* Solanoides with ſmooth Inchanters-nightſhade leaves.

This Genus of Plants was eſtabliſhed by Dr. *Tournefort*; the Characters of which are publiſh'd in the *Memoirs of the Academy of Sciences at Paris*; but Dr. *Linnæus* has ſuppoſed this to be the ſame with Father *Plumier*'s Genus of Rivina; ſo he has applied *Plumier*'s Title to theſe Plants; and acuſes *Plumier* of makeing a Blunder in his Figure, in putting eight *Stamina* to each Flower; whereas theſe Plants have but four: but the Miſtake is *Linnæus*'s; for the Flowers of *Plumier*'s Rivina have eight *Stamina*; but thoſe Plants are very different from theſe of the Solanoides.

Theſe Plants are Natives of the warmer Parts of *America*, from whence their Seeds have been brought into *Europe*; and the Plants are now become pretty common in the Gardens of the Curious. They are propagated by Seeds, which ſhould be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be tranſplanted each into a ſeparate ſmall Pot fill'd with freſh light Earth, and plunged into a moderate Hot-bed of Tanners Bark, obſerving to ſhade them from the Sun, until they have taken new Root; after which time they muſt have a large Share of Air admitted to them in warm Weather, and they muſt be conſtantly watered: when the Plants have obtained Strength, they ſhould be enured to bear the open Air by degrees; and in *June* they ſhould be ſhifted into larger Pots, and removed either into the Stove, or an airy Glaſs-caſe, where they may have a large Share of Air in warm Weather; and if they are duly watered, they will thrive, and produce Flowers in *July*, and their Fruit will ripen in *September*; but there will be a Succeſſion of Flowers and Fruit all the Winter, provided the Plants are preſerved in a moderate Temperature of Heat; ſo that the Fruit of theſe Plants afford an agreeable Variety in the Stove in Winter; for being of a bright red Colour, and growing in long Bunches, they make a fine Appearance. Theſe Plants will abide ſeveral Years, and produce plenty of Flowers and Fruit: but they ſhould conſtantly remain in Shelter; for if they are expoſed in Summer, they will loſe their large Leaves, and appear ſtinted; nor will the Fruit continue on the Plants; ſo that the beſt way is, to let them remain always in the Stove, giving them a large Share of Air in Summer, which will keep them in Vigour, and render them beautiful.

The Fruit of theſe Plants afford a fine red Colour, when bruiſed; but it ſoon fades on Paper; which renders it worth little. If a Quantity of theſe Fruit is ſqueez'd into a Glaſs of fair Water, ſo as to colour the Water of a deep-red, and a Stem of Flowers of the Tuberoſe put into the Glaſs, it will in one Night imbibe ſo much of the Liquor, as to variegate the Flowers with a Roſe-colour.

SOLANUM, Nightſhade.

The *Characters* are;

The Flower conſiſts of one Leaf, which is divided into five Parts, and expands in form of a Star: from the Flower-cup riſes the Pointal, which afterward becomes a round or oval ſoft ſucculent Fruit, containing many flat Seeds in each.

The *Species* are;

1. Solanum *officinarum, acinis nigricantibus.* C. B. P. Common Nightſhade of the Shops, with black Fruit.

2. Solanum *officinarum, acinis puniceis.* C. B. P. Nightſhade with red Fruit.

3. Solanum *officinarum, acinis luteis.* C. B. P. Nightſhade with yellow Fruit.

4. Solanum *ſcandens, ſeu dulcamara.* C. B. P. Perennial climbing Nightſhade, commonly called Bitter-ſweet.

5. Solanum *ſcandens, ſeu dulcamara, flore albo.* C. B. P. Perennial climbing Nightſhade, with a white Flower.

6. Solanum *ſcandens, foliis variegatis.* H. R. Par. Perennial climbing Nightſhade, with variegated Leaves.

7. Solanum *fruticoſum bacciferum.* C. B. P. Shrubby berry-bearing Nightſhade, commonly called *Amomum Plinii.*

8. Solanum *Guineenſe, fructu magno inſtar ceraſi nigerrimo umbellato.* *Boerh. Ind.* Nightſhade from *Guiney*, with large Fruit, reſembling black Cherries, which grow in an Umbel.

9. Solanum *ſpiniferum fruteſcens, ſpinis igneis, Americanum.* *Pluk. Phyt.* Shrubby and thorny *American* Nightſhade, with fire-colour'd Thorns.

10. Solanum *ſpinoſum, maxime tomentoſum.* *Bocc. Rar. Plant.* Thorny Nightſhade, very much cover'd with a Wool or Down.

11. Solanum *Americanum ſpinoſum, foliis melongenæ, fructu mammoſo.* *D. Lig. Tourn.* Thorny *American* Nightſhade, with Leaves like thoſe of Mad-apple, and a Fruit ſhaped like an inverted Pear, commonly called in *Barbados* Bachelors-pear.

12. Solanum *pomiferum fruteſcens Africanum ſpinoſum nigricans, flore boraginis, foliis profunde laciniatis.* *H. L.* Shrubby *African* apple-bearing Nightſhade, with black Thorns, a Flower like Borage, and deeply jagged Leaves; commonly called *Pomum Amoris.*

13. Solanum *Americanum ſpinoſum herbaceum, acanthi folio, flore amplo cæruleo.* *Houſt.* Prickly her-

baceous *American* Nightſhade, with a Bears-breech-leaf, and a large blue Flower.

14. SOLANUM *Americanum ſpinoſiſſimum herbaceum, anguriæ folio, flore luteo. Houſt.* The moſt prickly *American* Nightſhade, with a Water-melon-leaf, and a yellow Flower.

15. SOLANUM *Americanum, fruteſcens & ſpinoſum, quercus folio, baccis rubris. Houſt.* Shrubby and prickly *American* Nightſhade, with an Oak-leaf, and red Berries.

16. SOLANUM *Americanum bacciferum, caule & foliis tomento incanis ſpinoſis, flore luteo, fructu croceo. Sloan. Cat.* Berry-bearing *American* Nightſhade, with hoary Stalks and Leaves, a yellow Flower, and ſaffron-colour'd Fruit.

17. SOLANUM *Americanum fruticoſum bacciferum ſpinoſum, flore cæruleo. Sloan.* Shrubby berry-bearing *American* Nightſhade, with a blue Flower.

18. SOLANUM *Americanum, fruteſcens & ſpinoſum, flore magno albo. Houſt.* Prickly and ſhrubby *American* Nightſhade, with a large white Flower.

19. SOLANUM *Americanum, ſcandens & fruteſcens, flore magno cæruleo, fructu rubro. Houſt.* Shrubby climbing *American* Nightſhade, with a large blue Flower, and a red Fruit.

20. SOLANUM *Americanum fruteſcens, non ſpinoſum, lauri folio, flore racemoſo cæruleo. Houſt.* Smooth ſhrubby *American* Nightſhade, with a Bay-leaf, and blue Flowers growing in Cluſters.

21. SOLANUM *Americanum, fruteſcens & ſpinoſum, foliis infra tomentoſis, flore magno cæruleo. Houſt.* Shrubby and prickly *American* Nightſhade, with Leaves which are hoary underneath, and a large blue Flower.

22. SOLANUM *Americanum arboreſcens, verbaſci folio, fructu flaveſcente majori. Plum.* Tree-like *American* Nightſhade, with a Mullein-leaf, and a larger yellow Fruit.

23. SOLANUM *Bonarienſe arboreſcens, papas floribus. Hort. Elth.* Tree-like Nightſhade of *Buenos Ayres*, with Flowers like the Potato.

24. SOLANUM *Bahamenſe arboreſcens, folio ſinuato. Hort. Elth.* Tree-like Nightſhade from the *Bahama Iſlands*, with a ſinuated Leaf.

25. SOLANUM *lignoſum Africanum ſempervirens, laurinis foliis. H. Amſt.* Woody ever-green *African* Nightſhade, with Bay-leaves.

26. SOLANUM *Americanum ſcandens, foliis tomentoſis. Plum.* Climbing *American* Nightſhade, with woolly Leaves.

27. SOLANUM *Americanum ſcandens, aculeatum, hyoſcyami folio, flore intus albo, extus purpureo. Plum.* Climbing prickly *American* Nightſhade, with an Henbane-leaf, and a Flower white within, and purple on the Outſide.

28. SOLANUM *Americanum fruticoſum, perſicæ foliis, aculeatum. Plum.* Shrubby and prickly *American* Nightſhade, with Peach-leaves.

29. SOLANUM *dulcamarum Africanum, foliis craſſis hirſutis. Hort. Elth.* Climbing *African* Nightſhade, with hairy thick Leaves.

30. SOLANUM *Americanum arboreſcens, non ſpinoſum, flore parvo rubente, fructu aureo. Houſt.* Smooth *American* tree-like Nightſhade, with a ſmall rediſh Flower, and a gold-colour'd Fruit.

31. SOLANUM *Americanum arboreſcens, non ſpinoſum, lauri folio aſpero, floribus umbellatis albis. Houſt.*

Smooth tree-like *American* Nightſhade, with a rough Bay-leaf, and white Flowers growing in Umbels.

The firſt Sort is now very common upon Dunghils, and on rich cultivated Soils, in many Parts of *England*; where it often becomes a troubleſome Weed. This is the Sort which the College of Phyſicians have directed to be us'd in Medicine, under the Title of *Solanum hortenſe*: and although it is now become a very troubleſome Weed in many Gardens near *London*, yet it is not a Native of this Country, but is ſuppos'd to have been brought originally from *America*; from whence the greater Part of the Species of this Genus have been introduc'd into *Europe*. The ſecond and third Sorts are very near to the firſt, differing from it in the Colour of their Fruits, and the Plants being woolly. The third Sort I have received from the Iſland of *Barbados* two or three different times; ſo I ſuppoſe it to be a Weed of that Country. The eighth Sort produces much larger Fruit than either of the former, and the Plants will grow proportionably larger.

The fourth Sort is a climbing woody Plant, which grows in the Hedges in divers Parts of *England*; and is by ſome planted in Gardens, to cover Arbours, or ſhady Walks, in *London*, and other cloſe Places, where few other Plants will thrive. This Plant is alſo uſed in Medicine, for ſome particular Preparations; but the Herb-folks in the Markets often ſell this inſtead of the Garden Nightſhade, which is a cooling Plant, and this an hot acrid one; which renders it contrary to the Intention of the Ointment, wherein Nightſhade is one of the Ingredients.

The Sort with white Flowers is a Variety of the former, as alſo that with variegated Leaves; both which are preſerv'd by thoſe who are very curious in collecting the various Kinds of Plants.

Theſe may be eaſily propagated by laying down their Branches, or by planting their Cuttings in the Spring upon a moiſt Soil; where they will ſoon take Root, and may afterward be tranſplanted where they are to remain.

The *Amomum Plinii* is propagated in great Plenty, for the Beauty of its large red Fruit, which is always ripe in Winter; ſo that when the Trees have plenty of Fruit, they make a very handſome Appearance in a Green-houſe, when intermix'd with Orange, Myrtle, and other Exotics.

This Plant may be propagated by ſowing its Seeds in a Pot of rich Earth in the Spring, placing it upon a moderate Hot-bed, which will greatly facilitate the Growth of the Seeds: the Earth in the Pot ſhould be frequently water'd; for if it is kept too dry, the Seeds will not grow. When the Plants are come up, you ſhould make a gentle Hot-bed, which muſt be cover'd with rich Earth about ſix Inches thick; in this they ſhould be planted about ſix Inches Diſtance each Way, and the Bed arch'd over with Hoops, *&c.* and cover'd with Mats, to ſhade them from the Sun and Cold; obſerving frequently to water them.

When the Plants have acquir'd Strength, and the Seaſon becomes favourable, you muſt enure them to bear the open Air by degrees, to which they ſhould be fully expoſed in *June*; when alſo they ſhould be taken up, with a Ball of Earth to the Root of each Plant, and plac'd ſeparately in Pots fill'd with rich Earth; which muſt be ſet in a ſhady Situation, and frequently water'd until they have taken Root; after which they may be remov'd into a more open Expoſure;

and plac'd among other Exotic Plants; but they require a great Plenty of Water in dry Weather; without which they ſeldom produce much Fruit.

In Winter they muſt be remov'd into the Green-houſe, and placed in the coldeſt Part of the Houſe, where they may have as much free Air as poſſible in mild Weather; being ſo hardy, as many times to endure the Cold of our ordinary Winters abroad, when planted in a warm Situation; ſo that they only require to be ſhelter'd from ſevere Froſt.

Theſe Plants ſhould be annually ſhifted about the Latter-end of *April*, when their Roots ſhould be pared round, cutting off all the mouldy Fibres which were next the Pot, and the Pots fill'd up with freſh rich Earth; which will ſtrengthen their Flowers, and cauſe them to produce plenty of Fruit; which (as I ſaid before) ripens in Winter, and being of the Shape and Size of Cherries, are commonly call'd Winter Cherries, by the Gardeners.

The ninth and eleventh Sorts are much tenderer than the former, being brought from the warm Parts of *America*. Theſe are alſo propagated by ſowing their Seeds in the Spring upon a good Hot-bed; and when the Plants are come up, they ſhould be each tranſplanted into a ſeparate ſmall Pot fill'd with rich Earth, and plung'd into a freſh Hot-bed, obſerving to water and ſhade them until they have taken Root; after which they ſhould have Air and Water in proportion to the Heat of the Seaſon, and the Bed in which they are placed; and when their Roots have filled the Pots in which they were planted (which they will do in a Month's time, if they thrive), they muſt be ſhaken out; and after having gently pared off the Fibres which grew next the Pot, they ſhould be placed in Pots a Size larger, which muſt be fill'd with freſh rich Earth, and plunged into a freſh Hot-bed, to bring the Plants forward, obſerving to water them frequently; for they will not thrive without plenty of Moiſture in warm Weather.

In *July* theſe Plants may be enured to bear the open Air by degrees, into which they may be remov'd, if the Seaſon be warm; but otherwiſe they muſt always be preſerv'd either under Glaſſes, or in the Stove; and if they are placed in the open Air, they ſhould not remain there longer than the End of *September* leſt the Nights, growing cold, ſhould hurt them. During the Winter-ſeaſon they muſt be preſerv'd in the Stove, obſerving to water them frequently; and the ſecond Year they will produce Flowers and Fruit.

The tenth and twelfth Sorts are not ſo tender as the laſt; but require an open airy Glaſs-caſe, or a warm Green-houſe in Winter; but in Summer may be expos'd in the open Air with other Exotic Plants. Theſe may be propagated by ſowing their Seeds on an Hot-bed, as the former; and ſhould be manag'd as hath been directed for them, with this Difference, that they may be much ſooner expos'd to the open Air, and ſhould not be bred ſo tenderly. Theſe are preſerv'd for their odd Appearance, by ſuch as are curious in cultivating Exotic Plants: their Fruits, being ripe in Winter, afford a Variety in the Green-houſe; and their Leaves and Flowers, being very remarkable in their Colour, Shape, &c. render them worthy of a Place in every good Collection of Plants.

There is alſo another Variety, which differs very much from the tenth Sort, though call'd by that

Name in moſt of the *Engliſh* Gardens where it is preſerv'd; which I believe came from *Virginia*, and being ſomewhat like the Figure given by *Pere Boccone* of the tenth Sort, I ſuppoſe was taken for the ſame Plant; but they are very different from each other, as appear'd by ſome Plants which I rais'd from Seeds ſent me by Signior *Tilli*, Profeſſor of Botany at *Piſa*, of *Boccone*'s Plant, and others rais'd from the old Sort, which came from *Virginia*; both which, being cultivated together, retain'd a ſpecific Difference.

The thirteenth, fourteenth, fifteenth, eighteenth, nineteenth, twentieth, thirtieth, and thirty-firſt Sorts were diſcover'd by the late Dr. *Houſtoun*, near *La Vera Cruz* in *America*, from whence he ſent their Seeds to *England*; many of which have ſucceeded in ſeveral curious Gardens, where the Plants are now growing.

The thirteenth, fourteenth, and ſixteenth Sorts, being annual Plants, rarely produce ripe Seeds in *England*; but the others are abiding Plants, which flower every Year, and ſometimes perfect their Fruit in this Country.

Theſe, being Natives of a warm Country, muſt be rais'd on an Hot-bed early in the Spring; and when the Plants are fit to remove, they muſt be each planted in a ſeparate ſmall Pot fill'd with freſh rich Earth, and plunged into a moderate Hot-bed of Tanners Bark, obſerving to ſhade them from the Sun until they have taken new Root; after which time, they ſhould have a large Share of freſh Air admitted to them in warm Weather, and may be plentifully water'd. Toward the Latter-end of *June* it will be proper to harden the Plants to endure the open Air; and ſoon after they ſhould be remov'd into the Stove, where they muſt have as much free Air as poſſible in warm Weather; but as the Cold approaches in Autumn, they muſt be carefully protected therefrom; and in Winter they ſhould be kept in a moderate Temperature of Warmth, otherwiſe they will not live in this Country.

Some of theſe Sorts will bear to be expos'd in the open Air, in the Heat of Summer, provided they are plac'd in a warm Situation; but if the Seaſon ſhould prove cold, they will not thrive abroad; wherefore it will be better to let them remain in the Stove, and open the Glaſſes in Front, and at the Top of the Stove, every Day, to admit as much Air as poſſible in hot Weather; with which Management they will thrive much better than in the open Air.

The ſixteenth and ſeventeenth Sorts were diſcover'd by Sir *Hans Sloane* in *Jamaica*, where they grow in plenty. The Seeds of theſe were alſo ſent to *England* by the late Dr. *William Houſtoun*.

The twentieth Sort was diſcovered by the late Dr. *William Houſtoun*, at *Campechy*, where it hath been found in great Plenty by Mr. *Robert Millar*, a Surgeon, who ſent the Seeds to *England*.

The twenty-ſecond, twenty-ſeventh, and twenty-eighth Sorts were diſcover'd by Father *Plumier* in ſome of the *French* Settlements in the *Weſt-Indies*; and have ſince been found by Mr. *Robert Millar*, near *Carthagena* in *America*, from whence he ſent their Seeds.

The twenty-third Sort was ſent from *Buenos Ayres*; and the twelfth Sort is a Native of the *Bahama Iſlands*.

All theſe, being Natives of warm Countries, muſt be treated in the ſame manner as hath been directed for the former Sorts; otherwiſe they will not thrive in *England.*

The twenty-fifth and twenty-ſixth Sorts, being Natives of the *Cape of Good Hope*, are leſs tender than any of the other Kinds. Theſe muſt be preſerv'd in Pots, and plac'd in a good Green-houſe in Winter, where they ſhould have a large Share of free Air in mild Weather; but muſt be ſecur'd againſt Froſt, during the Winter-ſeaſon. They will require to be frequently refreſh'd with Water; but in cold Weather it muſt be given to them in moderate Quantities; and in Summer the Plants ſhould be plac'd in the open Air, in a warm-ſhelter'd Situation, during which Seaſon they will require a more plentiful Supply of Water in dry Weather; for they are thirſty Plants, as are all of the Tribe.

The climbing Sorts of Nightſhade may be propagated by Cuttings, which ſhould be taken off in *May*; and thoſe of the tender Kinds ſhould be planted in Pots filled with freſh Earth, and plunged into an Hot-bed of Tanners Bark, where they ſhould be carefully ſcreen'd from the Heat of the Sun every Day, until they have taken Root; after which they may be treated in the ſame manner as thoſe Plants which come from Seeds. But the twenty-ninth Sort, which is more hardy, will not require ſo much Care; for if the Cuttings of this Kind are planted in a ſhady Border, they will take Root, and may be afterward taken up, and potted, and placed in a warm Situation in the open Air till *October*, when they muſt be remov'd into the Green-houſe for the Winter-ſeaſon.

Theſe Plants, when they thrive well, and produce plenty of Fruit, make an agreeable Variety amongſt other Exotic Plants in the Stove and Green-houſe, eſpecially in the Winter-ſeaſon; at which time they commonly have plenty of Fruit, which make a pretty Appearance, when there are not many other Plants in Beauty. And ſome of theſe Sorts, whoſe Flowers are large, and of beautiful Colours, make a fine Appearance, and are worthy of a Place in the Stove, tho' they do not conſtantly produce Fruit in this Climate; eſpecially the thirteenth Sort, whoſe Flowers are very large, and of a fine blue Colour; and the twentieth Sort, whoſe Flowers, though ſmall, yet being produc'd in long Cluſters, and being of a fine blue Colour, make a beautiful Appearance; and theſe frequently flower in the Winter-ſeaſon.

The thirteenth, fourteenth, and ſixteenth, being annual Plants, the Seeds ſhould be ſown early in the Spring; and the Plants muſt be brought forward in Hot-beds, otherwiſe they will not produce ripe Fruit in this Country; for they ſeldom flower until the Middle of *July*, and the Plants periſh on the firſt Approach of Cold in the Autumn.

SOLDANELLA, Soldanel.

The *Characters* are;

It hath a bell-ſhaped Flower, conſiſting of one Leaf, which is, for the moſt part, fringed: the Pointal, which ariſes from the lower Part of the Empalement, afterward becomes a Fruit of a cylindrical Figure, opening at the Top, and full of Seeds, which adhere to a Placenta.

The *Species* are;

1. SOLDANELLA *Alpina rotundifolia. C. B. P.* Round-leav'd Soldanel of the *Alps*.

2. SOLDANELLA *Alpina rotundifolia, flore niveo. C. B. P.* Round-leav'd Soldanel of the *Alps*, with a ſnow-white Flower.

3 SOLDANELLA *Alpina, folio minus*

nus rotundo. C. B. P. Soldanel of the *Alps*, with a Leaf leſs round.

Theſe Plants grow on the *Alps*, and ſeveral other mountainous Places of *Italy*, *Germany*, and *Hungary*; from whence the Plants have been obtain'd by ſome curious Perſons, who preſerve them in their Gardens for the ſake of Variety. They are Plants of humble Growth, ſeldom riſing above three or four Inches high. Their round Leaves grow cloſe to the Ground, from between which the Flower-ſtems ariſe; each of which have four or five Flowers, which in the firſt Sort are of a fine blue Colour; but the ſecond of a Snow-white, which hang down, and are ſhap'd like Bells. They flower the Latter-end of *April*, or the Beginning of *May*, and their Seeds are ripe in *July*.

The beſt Method to propagate theſe Plants is, by parting of their Roots; becauſe their Seeds do not ſucceed, unleſs they are perfectly ripe, and well nouriſh'd; and this rarely happens in *England*. Nor do the Seeds which are brought from abroad, ſucceed; for they ſeldom grow, unleſs they are ſown ſoon after they are ripe.

The Seaſon for tranſplanting and parting theſe Roots is in *September*, that they may have time to make good Roots before Winter; for if they are remov'd in the Spring, they never flower very ſtrong; and if the Seaſon ſhould prove dry, the Plants will decay, unleſs they are conſtantly ſupply'd with Water.

The Soil in which theſe Plants thrive beſt, is a ſtrong cool Loam, and they muſt have a ſhady Situation; for if they are expos'd to the Sun, they will not live; nor will thrive in a warm light Soil. In dry Weather theſe Plants ſhould be frequently water'd; which will cauſe them to flower ſtrongly, and make a good Increaſe.

If the Seeds ripen in *England*, and any Perſon is deſirous to propagate the Plants that way, they ſhould be ſown in Boxes or Pots fill'd with freſh loamy Earth, ſoon after they are ripe; and the Boxes muſt be plac'd in a ſhady Situation, and frequently water'd in dry Weather. The Plants will ſometimes appear the ſame Autumn the Seeds are ſown; but more frequently they do not come up till the following Spring; ſo that the Earth muſt not be diſturb'd, nor Weeds permitted to grow in the Boxes. When the Plants come up, they muſt be duly water'd in dry Weather, and conſtantly plac'd in a ſhady Situation. The following Autumn the Plants ſhould be taken out of the Boxes, and planted in a ſhady Border, about ſix or eight Inches aſunder, where they may remain to flower; or they may be intermix'd with other low *Alpine* Plants in North Borders, where they will make an agreeable Variety.

SOLIDAGO, Woundwort.

The *Characters* are;

It hath compound radiated Flowers, which are ſome Female, and others Hermaphrodite: the Female Flowers compoſe the Rays, being ſituated round the Border, and each having a Segment ſtretched out like a Tongue, which is trifid: the Hermaphrodite Flowers are tubulous, and divided into five Parts at their Brim; theſe occupy the Diſk in the Middle: they are many of them included in a common cylindrical ſcaly Empalement: theſe Florets are each ſucceeded by a ſingle compreſs'd Seed, which is crown'd with a downy Subſtance.

The *Species* are;

1. Solidago *Saracenica. Dod. Pempt.* Saracens Woundwort.

2. Solidago *altiſſima, foliis oblongis*

longis ſerratis, radice repente. Talleſt Woundwort, with oblong ſawed Leaves, and a creeping Root.

3. Solidago *altiſſima, foliis oblongis glabris, marginibus dentatis.* Talleſt Eaſtern Woundwort, with oblong ſmooth Leaves, indented on the Edges.

4. Solidago *foliis ovato-lanceolatis, inferioribus petiolatis, ſuperioribus amplexicaulibus.* Low Woundwort, with oval ſpear-ſhap'd Leaves; the lower having long Pedicles, but the upper cloſely embracing the Stalk.

5. Solidago *foliis cordatis petiolatis ſerratis. Flor. Lugd. Alpine* Woundwort, with heart ſhap'd ſawed Leaves, having Footſtalks.

6. Solidago *foliis reniformibus ſuborbiculatis denticulatis, caule procumbente. African* Woundwort, with roundiſh Ground-ivy-leaves.

7. Solidago *foliis obverſe ovatis carnoſis crenatis, caule fruticoſo, corymbo ramoſo. Lin. Hort. Cliff. African* ſhrubby Woundwort, with oval fleſhy Leaves, which are crenated, and branching Flower-heads.

8. Solidago *foliis ſagittatis amplexicaulibus dentatis, caule fruticoſo. Lin. Hort. Cliff.* Shrubby *African* Woundwort, with arrow-ſhap'd Leaves embracing the Stalks.

9. Solidago *foliis linearibus integerrimis, corymbis ramoſis, florum radio breviſſimo. Lin. Hort. Cliff. African* Woundwort, with narrow whole Leaves, and branching Flowers, with very ſhort Rays, commonly call'd *African* Groundſel.

The firſt Sort grows wild about *Straſburgh*, as alſo in *Sileſia*. This hath a perennial Root, and an annual Stalk, which grows five or ſix Feet high; and if it is planted in moiſt rich Ground, it will grow much taller. The Leaves of this Sort are a Foot in Length, ſmooth on their Surface, and ſlightly ſawed on their Edges. The Flowers grow in Bunches on the Top of the Stalks, which are yellow, and ſomewhat like thoſe of Ragwort; but the Rays are not ſo long.

The ſecond Sort has been found growing wild in ſome Places in *England*. This doth not grow above four or five Feet high; the Leaves are deeply ſawed on their Edges, and the Root creeps in the Ground; ſo that it will ſpread over a large Tract in a ſhort time, if the Roots are not confin'd.

The third Sort is a Native of the Eaſt, from whence Dr. *Tournefort* ſent the Seeds to *Paris*. This is like the firſt Sort; but the Leaves are not ſo broad, and the Edges are very ſlightly indented: the Stalks grow taller, and the Bunches of Flowers are cloſer.

All theſe three are very hardy Plants, and delight in a moiſt rich Soil; for they naturally grow by the Sides of Rivers, or ſtanding Waters. They are too large to be admitted into Gardens; ſo are rarely preſerv'd but in Botanic Gardens, for the ſake of Variety.

The fourth Sort is a Native of *America*; it was firſt brought from *New-York*; but hath ſince been found in *Penſylvania*, and other Northern Parts of *America*. This Sort ſeldom grows three Feet high, nor do the Roots ſpread in the Ground like either of the former Sorts; ſo deſerves a Place in all large Gardens, where there is room to admit Plants of the ſame Growth. The lower Leaves of this Plant are pretty thick and ſucculent; theſe have long Footſtalks; but thoſe which come out toward the upper Part of the Stalks are much ſhorter, and have no Footſtalk, but cloſely embrace the Stalks. The Flowers are produced in large

Bunches on the Top of the Stalks, and are ſomewhat like thoſe of the Golden-rod, but larger. Theſe are produced toward the End of *Auguſt*, and continue in Beauty all *September*; which renders this Sort more valuable. This is as hardy as the other Sorts, and is propagated by parting of the Roots: the beſt time for this is in *October*, ſoon after the Flowers are paſt, that the Plants may have good Root in the Ground before the dry Weather of the Spring; otherwiſe they will not flower ſo well. It delights in a rich moiſt Soil.

The fifth Sort is ſomewhat like the ſecond; but the Leaves are much ſhorter, and ſhap'd ſomewhat like an Heart. This is very hardy, and requires no other Treatment than the three firſt Species.

The ſixth, ſeventh, eighth, and ninth Sorts are Natives of *Africa*, growing near the *Cape of Good Hope*; ſo theſe are too tender to live in the open Air in Winter, and are always preſerv'd in the Green-houſe in *England*. The ſixth Sort hath trailing Branches, which lie upon the Ground where they are not ſupported; nor do theſe Branches ever grow to be woody. The Flowers have no great Beauty, which makes this Plant of little Eſteem; ſo it is ſeldom preſerv'd, but in Botanic Gardens.

The ſeventh, eighth, and ninth Sorts are ſhrubby Plants, which grow about four or five Feet high, and divide into many irregular Branches. The Flowers are generally produc'd at the Ends of the Branches, which are yellow, and in Shape like thoſe of the Ragwort; to which Genus theſe Plants were uſually plac'd by the Botaniſts.

The ninth Sort is not ſo ſhrubby as the other two, nor do the Plants grow ſo tall: the Stalks are more herbaceous, and the Leaves are long, narrow, and hairy. Theſe are produc'd very cloſe on the Branches, without any Order, as are alſo the Branches. The Flowers grow in cloſe Cluſters at the End of the Shoots: theſe appear in *Auguſt* and *September*, and continue to the End of *October*, and ſometimes till near *Chriſtmas*.

Theſe four Sorts are eaſily propagated by Seeds or Cuttings; but the latter Method is generally practis'd in *England*; for it is much the ſhorter way, as every Cutting will grow, if they are planted in a ſhady Border, either in *June*, *July*, or *Auguſt*; and when the Cuttings have made good Roots, they ſhould then be taken up, and planted in Pots; for if they are permitted to remain long in the full Ground, their Roots will extend to a great Diſtance, and the Plants will ſhoot very vigorouſly; ſo that, if they are then remov'd, there will be great Danger of their ſucceeding; and if they ſhould live, the Plants will not be ſo handſome as thoſe which were early potted.

In the Winter-time theſe Plants muſt be houſed; but they ſhould have as much free Air as poſſible in mild Weather, and alſo plenty of Water; for they are very thirſty Plants; nor do they require any other Care in Winter, but to preſerve them from Froſt. In Summer they muſt be often ſhifted into other Pots; for their Roots will ſtrike thro' the Holes of the Pots (if they ſtand long unremov'd) into the Ground; and then the Plants will grow luxuriantly, and, upon being remov'd, will often die. As theſe Plants do not continue long, Cuttings ſhould be annually planted to ſecure the Species.

SONCHUS, Sowthiſtle.

Theſe are moſt of them Weeds in *England*, and are not planted in Gardens; for if their Seeds are once permitted to ſcatter upon the Ground, they will ſoon ſtock it with Plants; for which Reaſon, they ſhould always be extirpated; not only thoſe in the Garden, but alſo thoſe in the Parts near it; becauſe their Seeds, being furniſh'd with Down, are wafted in the Air to a conſiderable Diſtance, where falling on the Ground, they ſoon come up, and prove troubleſome.

SORBUS, The Service-tree.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are placed orbicularly, and expand in form of a Roſe; whoſe Flower-cup afterward becomes a Fruit ſhaped like a Pear or Medlar: to which muſt be added, Pennated Leaves, like thoſe of the Aſh.

The *Species* are;

1. Sorbus *ſativa. C. B. P.* The manured Service-tree.
2. Sorbus *ſativa, fructu pyriformi, medio rubente. H. Cath.* The manured Service, with pear-ſhap'd Fruit, red in the Middle.
3. Sorbus *ſativa, fructu ſerotino minori turbinato rubente. Tourn.* The leſſer late-ripe Service, with a Medlar-ſhaped Fruit.
4. Sorbus *ſativa, fructu ovato, medio rubente. Hort. Cath.* The manured Service, with an oval Fruit, which is red within.
5. Sorbus *ſativa, magno fructu turbinato, pallide rubente. Inſt. R. H.* The manured Service, with a large turbinated Fruit of a pale-red Colour.
6. Sorbus *ſativa, magno fructu nonnihil turbinato, rubro. Inſt. R. H.* The manured Service, with a large red Fruit not turbinated.
7. Sorbus *ſativa, fructu turbinato, omnium minimo. Inſt. R. H.* The manured Service, with the leaſt Fruit.
8. Sorbus *Orientalis, fraxini folio. Tourn. Cor.* Eaſtern Service, with an Aſh-leaf.
9. Sorbus *Orientalis, fructu magno, compreſſo, & flaveſcente. Tourn. Cor.* Eaſtern Service, with a large, flat, yellowiſh Fruit.
10. Sorbus *aucuparia. J. B.* The wild Service, or Quick-beam, by ſome call'd The Quicken-tree.
11. Sorbus *ſylveſtris, foliis ex luteo variegatis.* The wild Service or Quick-beam, with ſtriped Leaves.

The manured Service was formerly ſaid to be growing wild in *England*; but this I believe was a Miſtake; for ſeveral curious Perſons have ſtrictly ſearch'd thoſe Places where it was mention'd to grow, and could not find it; nor could they learn from the Inhabitants of thoſe Countries, that any ſuch Tree had grown there.

In *Italy* theſe Trees are very common, where they have a great Variety of Sorts, which were obtain'd from Seeds; but I have not obſerv'd in the *Engliſh* Gardens more than the three Sorts firſt-mention'd, and thoſe are yet very ſcarce; for I have not ſeen more than one large Tree of the true Service in *England*, which was lately growing in the Gardens formerly belonging to *John Tradeſcant* at *South-Lambeth*, near *Vauxhall* in *Surry*, who was a very curious Collector of rare Plants in King *Charles* the Second's time; which Tree was near forty Feet high, and did produce a great Quantity of Fruit annually. There are, indeed, ſome Trees of middling Growth in the Gardens of *Henry Marſh*, Eſq; at *Hamerſmith*, which produce Fruit (from whence ſeveral young Plants have been raiſed of late in the Nurſeries near *London*); but theſe are ſmall, compar'd to that in *John Tradeſcant*'s Garden.

There are great Numbers of large Trees of this Service growing wild about *Aubigny* in *France*; from whence his Grace the late Duke of *Richmond* brought a great Quantity of the Fruit, and from the Seeds raiſed a great Number of young Plants in his Gardens at *Goodwood* in *Suſſex*.

Theſe Fruits nearly reſemble Medlars in their Nature, being of a very auſtere Taſte, till they are rotten; when they have a more agreeable Flavour; but in *England* their Fruit does not ripen ſo well as in warmer Countries, and is therefore leſs eſteem'd; however, the Trees are propagated by ſuch Perſons as are curious in collecting the various Kinds of hardy Trees and Shrubs, for the Oddneſs of their Leaves and Fruit.

They may be propagated by ſowing their Seeds on a moderate Hot-bed in the Spring; and when the Plants are come up, they ſhould be carefully kept clear from Weeds, and in dry Weather water'd; but they ſhould be expos'd to the open Air; for the only Reaſon of making an Hot-bed is, to forward the Growth of the Seeds: but if, when the Plants are come up, the Bed is kept covered, it will draw the Plants, and ſpoil them. In this Bed the Plants ſhould remain until the Middle of *October*, when there ſhould be a warm light Spot of Ground prepar'd to receive them; into which they ſhould be planted in Rows two Feet aſunder, and a Foot diſtant in the Rows; obſerving to take them up carefully, and to plant them as ſoon as poſſible, that their Roots may not dry.

During the Summer, the Ground ſhould be kept conſtantly clear from Weeds; and in Winter there ſhould be a little Mulch laid upon the Surface of the Ground about their Roots, to protect them from being injur'd by Froſt; but in the Spring the Ground between them ſhould be dug, burying the Mulch therein; in doing of which, you muſt be careful not to cut or injure the Roots of the Plants.

In this Nurſery they may continue three or four Years, according to their Growth, when it will be proper to tranſplant them out where they are to remain; the beſt Seaſon for which is in *October*, or in the Spring, juſt before they begin to ſhoot. The Soil ſhould be warm in which they are planted, and the Situation defended from cold Winds; in which Place they will thrive, and produce Fruit in a few Years; but as the Fruit will vary from thoſe from which the Seeds were taken (as is the Caſe of moſt Sorts of Fruit), the ſureſt Method to have the particular Sorts which you intend to cultivate, is, to bud or graft them either upon their own, or the wild Service Stock; upon which they will take, and produce Fruit in a few Years.

The four Sorts next-mention'd are very common in the *Italian* Gardens; and of late Years they have been brought into *England* by the Perſons who bring over Orange-trees, *&c.* ſo that in a few Years they may be common in *England*. But the great Difficulty is in keeping of the Sorts; becauſe when theſe Trees are propagated by Seed, they vary as much in their Kinds as Apples and Pears: and it is very difficult to propagate them by grafting or budding; for they ſeldom ſucceed when grafted on Pears, Apples, or Medlars; and it is not eaſy to raiſe Stocks of their own

Kind, unleſs the Seeds be procur'd from abroad; for the Fruit does not always ripen in this Country.

The fifth and ſixth Sorts were diſcover'd by Dr. *Tournefort* in the *Levant*; but at preſent they are not in the *Engliſh* Gardens. Theſe Sorts may be all propagated by Seeds, after the manner directed for the former Sorts. The beſt way to procure good Seeds of theſe Plants is, to have the Fruit, when duly ripen'd abroad, put up in Boxes of Sand, and ſent over, in which Method they may be brought over very well; for if the Fruit ſhould rot, the Seeds will remain good by being preſerv'd in Sand.

The wild Service or Quick-beam grows wild in divers Parts of *England*; but it is often cultivated in Gardens, for Variety. This produces large Bunches of Flowers at the Extremity of its Branches in *May*, which are ſucceeded by large roundiſh Fruit, which change to a beautiful ſcarlet Colour in Autumn, when they afford an agreeable Variety in Wilderneſs-quarters.

There are few of theſe Trees in any of the Counties near *London*, which are more than twenty Feet high; but in the Northern Counties, as alſo in *Shropſhire* and *Wales*, I have ſeen many of theſe Trees of a very large Size; ſome of them near two Feet Diameter in their Stems, and upward of forty Feet high. It is called the Roane-tree in the North; and in ſome Places the Wicken-tree; which is probably a Corruption of Quick-beam.

The Wood of this Tree is much commended by the Wheelwright for being all Heart; and it is of great Uſe for Huſbandmens Tools, Goads, *&c.* The Flowers of this Tree ſmell very ſweet, and the Fruit is extraordinary Food for Thruſhes; ſo that where theſe Trees are planted, they will greatly frequent.

The Sort with variegated Leaves is preſerv'd by ſuch as are curious in collecting the ſeveral Sorts of ſtriped Plants; but there is no great Beauty in it. This may be propagated by Layers, or by being budded on the plain Sort; but they become plain again, if planted on a very rich Soil.

Theſe Trees ſhould have a moiſt ſtrong Soil; but will grow in the moſt expoſed Places, being extremely hardy; which renders them worthy of Care, ſince they will thrive where few other Trees will ſucceed.

SORREL. *Vide* Acetoſa.

SOUTHERNWOOD. *Vide* Abrotanum.

SOWBREAD. *Vide* Cyclamen.

SPARTIUM, The Broom-tree.

The *Characters* are;

It hath a papilionaceous Flower, whoſe Pointal, which riſes from the Flower-cup, afterward becomes a ſhort, roundiſh, ſwelling Pod, containing, for the moſt part, one kidney-ſhap'd Seed in each.

The *Species* are;

1. SPARTIUM *alterum monoſpermum, ſemine reni ſimile. C. B. P.* Another *Spaniſh* Broom, with Pods containing one kidney-ſhap'd Seed.

2. SPARTIUM *tertium, flore albo. C. B. P.* The white *Spaniſh* Broom.

3. SPARTIUM *Orientale humile, fructu villoſo & roſtrato. Tourn. Cor.* Dwarf Eaſtern Broom, with an hairy beaked Fruit.

4. SPARTIUM *Orientale, ſiliqua compreſſa, glabra & annulata. Tourn. Cor.* Eaſtern Broom, with a flat ſmooth, circular Pod.

5. SPARTIUM *Americanum, portulacæ foliis, aculeatum, ebeni materie. Plum.* Prickly *American* Broom, with Purſlain-leaves, whoſe Wood is taken for Ebony.

6. SPARTIUM *Americanum ſcan-*

dens, citri foliis, floribus albis, ad nodos confertim naſcentibus. Plum. Climbing *American* Broom with Citron-leaves, and white Flowers, which are produc'd in Bunches at the Joints.

The firſt and ſecond Sorts grow plentifully in *Spain* and *Portugal*; from both which Countries the Seeds may be eaſily procur'd. Theſe Seeds ſhould be ſown in the Middle of *April*, upon a Bed of freſh light Earth: the beſt way will be to ſow them in Drills about an Inch deep: the Drills ſhould not be leſs than one Foot aſunder, and the Seeds may be laid in the Drills at about three Inches Diſtance; which will allow room for the Plants to grow till *Michaelmas* following; before which time it will not be ſafe to remove them. Nor ſhould they be ſuffer'd to ſtand longer; becauſe they ſhoot downright Roots very deep into the Ground; and if theſe are cut or broken, when they are grown large, the Plants frequently miſcarry. Although I have here directed the ſowing of theſe Seeds in *April*, yet it muſt be underſtood, if the Seaſon proves favourable; otherwiſe it will be better to defer it longer: for theſe Seeds are as ſubject to periſh in the Ground, by Cold or Wet, as are the Kidney-beans; therefore when the Seaſon is favourable to theſe, the Seeds of the Brooms may be ſafely ſown.

At *Michaelmas* ſome of the Plants of each Kind may be taken up, and potted, to be ſhelter'd in Winter; and others may be planted in a warm Situation, and on a dry Soil; where, if the Winter ſhould not prove ſevere, they will ſtand very well. It will alſo be proper to leave ſome of the Plants in the Seed-bed, where, if the Winter ſhould prove ſevere, they may be ſhelter'd with Mats, and ſome Mulch laid about their Roots, to prevent the Froſt penetrating the Ground; for theſe Plants are ſo tender, as not to live abroad in hard Froſt; though, in moderate Winters, they will do very well: but it is always neceſſary to have a Plant or two of each Sort in Pots, that they may be ſhelter'd in Winter to preſerve the Sorts.

The third and fourth Sorts were diſcover'd by Dr. *Tournefort* in the *Levant*, from whence he ſent their Seeds into *France*; but theſe are at preſent pretty rare in *England*. Theſe are as hardy as the other Sorts; ſo may be treated in the ſame way. All theſe Sorts grow to the Height of ſix or eight Feet, and have the Appearance of the *Spaniſh* Broom; but their Branches are much ſlenderer, and the Leaves are very ſmall, as are alſo their Flowers: but the two firſt Sorts have been of late Years introduc'd in plenty into the *Engliſh* Gardens, where, being intermix'd with other Shrubs of the ſame Growth, they add to the Variety.

Theſe flower in *July*; and, in very warm Seaſons, they ſometimes perfect their Seeds in *England*.

The third Sort is very common in *Jamaica*, and ſeveral other Places in the *Weſt-Indies*; where the Wood is cut, and ſent to *England*, under the Title of Ebony; though it is not the true Ebony, which is a Native of the Eaſtern Country, and is a Plant of a very different Genus. The Wood of this *American* Ebony is of a fine greeniſh brown Colour, and poliſhes very well; ſo is much coveted by the Inſtrument-makers; and is uſed for ſeveral Purpoſes, being of a very hard, durable Nature.

The fourth Sort is pretty common in the *Spaniſh Weſt-Indies*, from whence I have receiv'd the Seeds, which were collected by Mr. *Robert*

Miller. This is a climbing Plant, which will twiſt round whatever Trees grow near it, and will riſe to a great Height. The Leaves of this Plant are thick and ſtrong, ſomewhat reſembling thoſe of the Citron-tree; and continuing green the whole Year, they make an agreeable Variety in the Stove, amongſt other tender Exotic Plants.

Theſe Plants are propagated by Seeds, which muſt be procured from the Countries of their natural Growth; for they do not produce Seeds in this Climate. Theſe Seeds ſhould be ſown in Pots fill'd with freſh light Earth, early in the Spring, and plung'd into a good Hot-bed of Tanners Bark. In about a Month after the Seeds are ſown, the Plants will appear, when they muſt be carefully treated (being very tender while young): they muſt have freſh Air admitted to them every Day, when the Weather is warm; and ſhould be frequently refreſh'd with Water, when the Earth in the Pots appears dry. In about five or ſix Weeks after the Plants appear, they will be fit to tranſplant; when they ſhould be carefully ſhaken out of the Pots, and ſeparated, planting each into a ſmall Pot fill'd with light rich Earth, and then plunge them into the Hot-bed again; being careful to ſhade them from the Sun every Day, until they have taken Root; after which time they muſt be treated in the ſame manner as other very tender Exotic Plants, by giving them Air every Day in warm Weather, and watering them every other Day gently; and, when the Nights are cold, to cover the Glaſſes. In this Hot-bed the Plants may remain till Autumn, when they muſt be remov'd into the Stove, and plung'd into the Bark-bed. Thoſe of them whoſe Roots have filled the Pots, ſhould be carefully ſhifted into Pots one Size larger, before they are plunged; but as theſe Plants are not of quick Growth while young, they do not require to be often ſhifted out of the Pots. During the Winter-ſeaſon theſe Plants muſt be kept very warm (eſpecially the firſt Year), and muſt be frequently refreſh'd with Water; but in cold Weather it muſt be given to them in ſmall Quantities; and if their Leaves ſhould contract Filth, they muſt be waſhed with a Sponge to clean them, otherwiſe the Plants will not thrive. As theſe Plants are very tender, they will not live in the open Air in this Country, even in the warmeſt Part of the Year; therefore they muſt be conſtantly kept in the Stove, and ſhould be plung'd in the Bark-bed; obſerving in the Summer-ſeaſon, when the Weather is warm, to admit a large Share of freſh Air to the Plants; but in Winter they muſt be kept very warm. With this Management the Plants will thrive very well, and in a few Years will produce their Flowers; when they will make a pretty Appearance in the Stove.

SPERGULA, Spurrey.

The *Characters* are;

It hath a roſe-ſhap'd Flower, conſiſting of five Leaves, which are included in a five-leav'd Empalement: in the Centre of the Flower ariſes the Pointal, which afterward becomes a roundiſh membranaceous Fruit, which opens in three Parts, and is filled with ſmall Seeds, which in ſome Species have a Border round them.

The *Species* are;

1. SPERGULA. *J. B.* The common Spurrey.

2. SPERGULA *marina noſtras. J. B.* The Sea Spurrey.

3. SPERGULA *purpurea. J. B.* Purple Spurrey.

4. SPERGULA *minima, ſeminibus mar-*

marginatis. The leaſt Spurrey, with border'd Seeds.

Theſe Plants grow wild in ſeveral Parts of *England:* the ſecond Sort is found on the Sea-ſhores, where the Salt-water uſually flows; but the other Sorts grow on ſandy Commons, and amongſt Corn, in great Plenty.

The firſt Sort is cultivated in *Holland* and *Flanders*, for feeding their Cattle: the uſual time of ſowing the Seed is in *Auguſt*, that the Plants may acquire Strength before the Winter's Cold. The Uſe that is made of this Graſs, is to feed Sheep, and other Cattle, in Winter, when the common Graſs hath perfected its Growth. This Plant ſeldom riſes above ſix Inches high; ſo will not afford a very great Quantity of Food; but as it will grow on the pooreſt Sand, it may be cultivated in many Places to good Advantage, where no other Graſs will thrive ſo well; and by feeding it off the Ground, the Dung of the Cattle will improve the Land. This Paſture, it is affirm'd, will make excellent Butter; and the Mutton fed on it is ſaid to be well taſted; ſo is by many preferr'd to that fed on Turneps. Hens will greedily eat this Herb, and it makes them lay more Eggs.

This Plant, being annual, muſt be ſown every Year; and whoever is willing to ſave the Seeds, ſhould ſow it in *April*, that the Plants may flower the Beginning of *July*, and the Seeds will ripen in *Auguſt*; when it muſt be cut before the Heads are quite brown, otherwiſe the Seeds will ſoon ſcatter.

The Seeds being very ſmall, about twelve Pounds will be ſufficient to ſow an Acre of Land. The Ground ſhould be well dreſs'd before the Seeds are ſown; for if the larger Clods are not broke, there will be an uneven Crop of Graſs: People in the low Country ſow this Seed after a Crop of Corn is taken off the Land. The fourth Sort is now much cultivated in *Flanders*, though it is a much lower Plant than the common Sort; but they eſteem it a much better Graſs. The Seeds of this Kind are ſmaller and flatter than thoſe of the common Sort, and have a white Border round each.

SPHONDYLIUM, Cow-parſnep.

The *Characters* are;

It is an umbelliferous Plant, with a roſe-ſhaped Flower, conſiſting of five uneven heart-ſhap'd Leaves, which are placed circularly, and reſt on the Empalement; which afterward becomes a Fruit, compoſed of two large Seeds, which are flat and oval, having a Point that wants a Border within, chanell'd, and generally caſting off their Cover, and marked with dark Spots, on the Part where they adhere to each other,

The *Species* are;

1. Sphondylium *vulgare hirſutum. C. B. P.* Common hairy Cow-parſnep.

2. Sphondylium *vulgare hirſutum, floribus purpureis. C. B. P.* Common hairy Cow-parſnep, with purple Flowers.

3. Sphondylium *majus, ſive panax Herculeum quibuſdam. J. B.* Greater Cow-parſnep, or *Hercules*'s All-heal.

4. Sphondylium *criſpum. J. B.* Curled Cow-parſnep.

5. Sphondylium *hirſutum, foliis anguſtioribus. C. B. P.* Hairy Cow-parſnep, with narrower Leaves.

6. Sphondylium *foliis anguſtioribus atro-purpureis. H. R. Monſp.* Cow-parſnep with narrower dark-purple Leaves.

7. Sphondylium *Alpinum parvum. C. B. P.* Small Cow parſnep of the *Alps*,

8. Sphondylium *Alpinum glabrum. C. B. P.* Smooth Cow-parſnep of the *Alps*.

9. Sphondylium *Orientale maximum. Tourn. Cor.* Greateſt Eaſtern Cow-parſnep.

10. Sphondylium *Orientale, ampliſſimo folio, caule brevi. Tourn. Cor.* Eaſtern Cow-parſnep, with a very large Leaf, and a ſhort Stalk.

11. Sphondylium *Orientale, longiſſimo & anguſtiſſimo folio. Tourn. Cor.* Eaſtern Cow-parſnep, with a very long and very narrow Leaf.

12. Sphondylium *Orientale anguſtifolium glabrum, aniſum olens. Tourn. Cor.* Smooth narrow-leav'd Eaſtern Cow-parſnep, ſmelling like Aniſe.

13. Sphondylium *Orientale, foliis ammi perennis. Tourn. Cor.* Eaſtern Cow-parſnep, with perennial Biſhops-weed-leaves.

14. Sphondylium *Orientale humilius, foliis abſinthii. Tourn. Cor.* Dwarf Eaſtern Cow-parſnep, with Wormwood-leaves.

15. Sphondylium *Orientale, dauci vulgaris folio, aſphodeli radice. Tourn. Cor.* Eaſtern Cow-parſnep, with a common Carrot-leaf, and an Aſphodel-root.

The firſt and fifth Sorts grow wild in *England*: the firſt is very common on the Sides of Ditches, and the Borders of Fields, in moiſt Land every-where. The other Sorts are not Natives of this Country; but are many of them preſerv'd in Botanic Gardens, for the ſake of Variety.

They are all very hardy Plants, which may be propagated by Seeds: the beſt time for ſowing them is in Autumn, ſoon after the Seeds are ripe. They ſhould be ſown where the Plants are deſign'd to remain; becauſe they ſend forth Tap-roots, ſomewhat like thoſe of the Parſnep; therefore do not thrive ſo well when tranſplanted, as if ſuffer'd to remain where they are ſown. The Plants grow very large; wherefore the Seeds ſhould be ſown in Drills, at two Feet and an half Diſtance; and in the Spring, when the Plants appear, they ſhould be thinned, ſo as to leave them at leaſt eighteen Inches aſunder, in the Rows; after which they will require no farther Care, but to keep them clear from Weeds; and when the Plants have obtained Strength, they will not eaſily be injur'd by Weeds; for they will over bear them, and prevent their getting up. The ſecond Year theſe Plants will produce Flowers and Seeds, and their Roots will abide many Years, and produce Seeds every Year; which, if permitted to ſcatter, will fill the neighbouring Ground, and become troubleſome Weeds.

The third Sort (which is very common in *Germany*) hath been, by ſome of the *German* Writers, taken for the *Acanthus*, or Bears-breech; and the ſame Qualities apply'd to it.

The Name of Cow-parſnep was given to this Plant, from the Cows eating of it; but they do not chooſe to eat the Leaves of this Plant, if they can get any other Food, as may be obſerv'd in the Fields where the Plant is in great Plenty; for the Cows will eat the Graſs very cloſe about theſe Plants, though they are rarely found to be touch'd by them, unleſs when the Graſs is burnt up. Rabbets will eat the Leaves of this Plant, and ſeem fond of it.

SPINA ALBA. *Vide* Meſpilus.

SPINACHIA, Spinach, or Spinage

The *Characters* are;

It hath an apetalous Flower, conſiſting of many Stamina *included in the Flower-cup, which are produc'd in Spikes upon the Male Plants, which* *are barren: but the Embryoes are produc'd from the Wings of the Leaves on the Female Plants, which afterward becomes a roundiſh or angular Seed, which in ſome Sorts has Thorns adhering to it.*

The *Species* are;

1. SPINACHIA *vulgaris, capſula ſeminis aculeata. Tourn.* The common prickly or narrow-leav'd Spinach.

2. SPINACHIA *vulgaris, capſula ſeminis non aculeata. Tourn.* Common ſmooth-ſeeded Spinach, with broader Leaves.

3. SPINACHIA *vulgaris, capſula ſeminis non aculeata, folio maximo rotundo.* Spinach with ſmooth Seeds, and a very large round Leaf.

The firſt of theſe Sorts is commonly cultivated in Gardens for Winter-uſe; it being much hardier than any of the other Sorts.

The Seeds of this Kind ſhould be ſown upon an open Spot of Ground towards the Latter-end of *July*; obſerving, if poſſible, to do it when there is an Appearance of Rain: for if the Seaſon ſhould prove dry for a long time after the Seed is ſown, the Plants will not come up regularly; and many times there will not be half a Crop. When the Spinach is come up, the Ground ſhould be hoed to deſtroy the Weeds, and alſo to cut up the Plants where they are too cloſe, leaving the remaining Plants about three or four Inches aſunder; but this ſhould always be done in dry Weather, that the Weeds may be deſtroy'd ſoon after they are cut.

About a Month or five Weeks after the firſt Hoeing, the Weeds will begin to grow again; therefore the Ground ſhould be then hoed again the ſecond time, obſerving, as before, to do it in dry Weather. But if the Seaſon ſhould prove moiſt, it will be proper to gather the Weeds up after they are cut, and carry them off the Ground; for if the Spinach is not clean'd from Weeds before Winter, they will grow up, and ſtifle it ſo, that in wet Weather the Spinach will rot away.

In *October* the Spinach will be fit for Uſe; when you ſhould only crop off the largeſt Leaves, leaving thoſe in the Centre of the Plants to grow bigger; and thus you may continue cropping it all the Winter and Spring, until the young Spinach, ſowed in the Spring, is large enough for Uſe, which is commonly in *April*; at which time the Spring advancing, the Winter-ſpinach will run up to Seed; ſo that the Roots ſhould be then cut up, leaving only a ſmall Parcel to produce Seeds.

But the Ground in which this Winter-ſpinach is ſown, being commonly planted with early Cabbages, it is not proper to let any of the Spinach remain there for Seed; but it ſhould be cleared off as ſoon as ever the Spring Spinach is fit for Uſe, that the Cabbages may be earth'd up, and laid clear, which is of great Service to them; therefore you ſhould ſow a ſmall Spot of Ground with this Sort of Spinach, on purpoſe to ſtand for Seed; where there ſhould be no other Plants among it.

The two Sorts with ſmooth Seeds produce much larger and thicker round Leaves than the former; but being ſomewhat tenderer, are always ſown in the Spring; eſpecially the third Sort, which is preferable to either of the former for Summer-uſe.

Theſe are either ſown upon an open Spot of Ground by themſelves, or elſe mix'd with Radiſh-ſeed, as is the common Practice of the *London* Gardeners, who always endeavour to have as many Crops from their Land in a Seaſon as poſſible; but, where Land is cheap in the Country, it will be the better Method to ſow it alone without any other Sort of Seed mix'd with it; and when the Plants are come up, the Ground ſhould be hoed to deſtroy the Weeds, and cut out the Plants where they are too cloſe, leaving the remaining about three Inches aſunder: and when they are grown ſo large as to meet, you may then cut out a Part of it for Uſe, thinning the Plants, that they may have room to ſpread: and this Thinning may be twice perform'd, as there is Occaſion for the Spinach; at the laſt of which, the Roots ſhould be left eight or ten Inches aſunder. If then you hoe the Ground over again, to deſtroy the Weeds, it will be of great Service to the Spinach; for if the Land is good upon which it was ſown, the third Sort, with this Management, will many times produce Leaves as large as the broad-leav'd Dock, and be extremely fine.

But in order to have a Succeſſion of Spinach through the Seaſon, it will be proper to ſow the Seed at three different times in the Spring; the firſt early in *January*, which muſt be on a dry Soil; the ſecond the Beginning of *February*, upon a moiſter Soil; and the third the Beginning of *March*, which ſhould be on a very moiſt: and this third Sowing ſhould be hoed out thinner at the firſt time of hoeing it, than either of the former Sowings; for there will be no Neceſſity to leave it for cutting out thin for Uſe, becauſe the former Sowings will be ſufficient to ſupply the Table till this third Sowing is full-grown: beſides, by leaving it thin at firſt, it will not be apt to run up to Seed ſo ſoon as it would if the Plants were cloſe.

Theſe Sowings here mention'd are ſuch as are practis'd by the Kitchen-gardeners near *London*; but as this Herb is much us'd in Soups, &c. for great Tables, there ſhould be ſome Seeds ſown every three Weeks, during the Summer-ſeaſon, to ſupply the Kitchen: but theſe late Sowings ſhould be on moiſt Ground, otherwiſe, if the Summer proves hot and dry, the Spinach will run to Seed before the Plants obtain Strength.

In order to ſave Seed of either of theſe Kinds, you ſhould ſow an open rich Spot of Ground, with the Sort you intend, in *February*, after the Danger of being injur'd by Froſt is over; and when the Plants are come up, they ſhould be hoed out to ſix or eight Inches Diſtance, obſerving to cut down the Weeds at the ſame time; and when the Plants have grown about three Weeks or a Month longer, they ſhould be hoed a ſecond time, when they ſhould be left twelve or fourteen Inches aſunder at leaſt; for when they have ſhot out their Side-branches, they will ſufficiently ſpread over the Ground.

You muſt alſo obſerve to keep them clear from Weeds, which, if ſuffer'd to grow amongſt the Spinach, will cauſe it to run up weak, and greatly injure it. When the Plants have run up to Flower, you will eaſily perceive two Sorts amongſt them, *viz.* Male and Female; the Male will produce Spikes of ſtamineous Flowers, which contain the *Farina*, and are abſolutely neceſſary to impregnate the Embryoes of the Female Plants, in order to render the Seeds prolific. Theſe Male Plants are, by the Gardeners, commonly call'd *She Spinach*; and are often, by the Ignorant, pull'd up as ſoon as they can be diſtinguiſh'd from the Female, in order, as they ſuppoſe to give room for the Sead-bearing to ſpread: but from Experiments which I made on theſe Plants, I find, where-ever the Male Plants are intirely remov'd before the *Farina* is ſhed over the Female Plants, the Seed will not grow which they produce; ſo that it is abſolutely neceſſary to leave a few of them in every Part of the Spot, tho' there may be a great many drawn out where they are too thick; for a ſmall Quantity of Male Plants (if rightly ſituated) will be ſufficient to impregnate a great Number of Female; becauſe they greatly abound with the *Farina*, which, when ripe, will ſpread to a conſiderable Diſtance, when the Plants are ſhaken by the Wind.

When the Seeds are ripe (which may be known by their changing their Colour, and beginning to ſhatter), the Plants ſhould be drawn up, and ſpread abroad for a few Days to dry; obſerving to turn the Plants every other Day, that the Seeds on both Sides may dry equally: you muſt alſo guard the Seeds from Birds, otherwiſe they will devour them. When it is dry, the Seeds ſhould be threſh'd out, and clean'd from the Dirt, and laid where Mice cannot come to them; for they are extremely fond of this Seed.

SPIRÆA FRUTEX, Spiræa Frutex, *vulgo*.

The *Charactres* are;

The Flower is compos'd of many Leaves, which are plac'd in a circular Order, and expand in form of a Roſe: out of whoſe Flower-cup riſes the Pointal, which afterward becomes a Fruit compos'd of ſeveral Pods, in which are contain'd ſeveral oblong Seeds.

The *Species* are;

1. SPIRÆA *ſalicis folio. Tourn.* Spiræa Frutex, *vulgo*.

2. SPIRÆA *opuli folio. Tourn.* Spiræa with a Marſh-elder-leaf, commonly call'd *Virginian* Gelder-roſe with a Curran-leaf.

3. SPIRÆA *hyperici folio non crenato. Tourn.* Hypericum Frutex, *vulgo*.

4. SPIRÆA *Hiſpanica, hyperici folio crenato. Inſt. R. H. Spaniſh* Spiræa, with a notched Leaf.

5. SPIRÆA *Americana, foliis oblongis crenatis, floribus albis. American* Spiræa, with oblong crenated Leaves, and white Flowers.

6. SPIRÆA *Americana, foliis rotundis glabris minime ſerratis, floribus rubris. American* Spiræa, with round ſmooth Leaves, a little ſawed on the Edges, and a red Flower.

The firſt of theſe Shrubs is very common in the Nurſeries near *London*, where it is ſold with other flowering Shrubs at a certain Price by the Hundred. This Shrub ſeldom riſes above five Feet high; ſo is proper to intermix with other Shrubs of the ſame Growth, in ſmall Wilderneſs-quarters, and other Plantations of flowering Trees.

This Plant may be propagated from Suckers, which are ſent forth in plenty from the Stems of the old Plants, or by laying down the tender Branches, which, when rooted, ſhould be tranſplanted out in Rows at three Feet Diſtance, and the Plants a Foot aſunder in the Rows. In this Nurſery they may remain two Years, obſerving to keep the Ground clear from Weeds, and in the Spring to dig up the Ground between the Rows, ſo that the Roots may the more eaſily extend themſelves; and if they ſhoot out many Side-branches, they ſhould be pruned off, ſo as to reduce the Shrubs to a regular Figure; and afterward they may be tranſplanted where they are to remain, either in ſmall Wilderneſs-quarters, or in Clumps of flowering Shrubs, obſerving to place them amongſt other Sorts of equal Growth.

The ſecond Sort is not quite ſo common in *England* as the former. This was originally brought from *America*; but it being full as hardy as the former, and increaſing as faſt by Suckers, it may ſoon be obtained in Plenty. This is nearly of the ſame Growth with the former, and may be intermixed therewith in Wilderneſs-quarters, to add to the Variety: it may be propagated and managed in the ſame manner as the former.

The third Sort is very common in the Nurſeries near *London*, where it is generally known by the Name of *Hypericum Frutex*, and is ſold amongſt other flowering Shrubs at a common Rate. This may be propagated by laying down the Under-branches, which will take Root in the Compaſs of one Year, when they may be taken off, and planted in a Nurſery for two or three Years (as hath been directed for the former); after which they may be tranſplanted out where they are deſign'd to remain, placing them with the two former, being nearly of the ſame Growth, where they will add to the Variety.

The fourth Sort differs from the third in nothing but the Leaves being notched on their Edges: this is not very common at preſent in the Nurſery-gardens: nor will it be ever regarded as a different Species, but by thoſe who are nice in the diſtinguiſhing of the minute Difference in Plants; becauſe the whole Appearance of the Plants is the ſame.

The two firſt Sorts produce their Flowers at the Extremity of their Shoots, the firſt in a long Spike, and the ſecond in form of an Umbel; but the third Sort produces its Flowers at the Joints of the former Year's Wood, in Bunches; ſo that the whole Tree ſeems cover'd with white Flowers, when they are blown. They all three produce their Flowers in *May*, and ſometimes continue in Beauty till *June*, in a cool Seaſon; for which they are eſteemed by the Curious.

Theſe Shrubs require no other Pruning, but to cut out all the dead Branches, and ſuch as grow irregular, and take off all their Suckers every Year; for if theſe are permitted to grow, they will ſtarve the old Plants, by drawing away their Nouriſhment. The Ground between them ſhould alſo be dug every Spring, to encourage their Roots; and every third Year a little rotten Dung buried therein, which will cauſe them to flower very ſtrong.

The two *American* Spiræas have been lately introduced into the *Engliſh* Gardens from *Penſylvania*: theſe are low Shrubs, which ſeldom riſe above three Feet high: their Shoots are ſlender; and the Flowers are produced at the Extremity of the Branches, in Spikes: theſe ſeldom flower until the End of *June*, or the Beginning of *July*, after the other Sorts are paſt; ſo they are more eſteemed on that Account: they may be propagated by laying down their Branches in the ſame manner as the common Sort: but theſe ſhould be planted in a warm-ſhelter'd Situation, otherwiſe their Shoots will be deſtroyed by the Cold in Winter.

AFRICAN SPIRÆA. *Vide* Dioſma.

SQUASHES. *Vide* Melopepo.

SQUILLS. *Vide* Scilla.

STACHYS, Baſe Horehound.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, whoſe Upper-lip is ſomewhat arch'd and erect; and the Under-lip is cut into three Segments, the middle one being larger than the

STARWORT. *Vide* After.

STATICE, Thriſt or Sea-pink.

The *Characters* are;

It is a Plant with a Flower gather'd into an almoſt ſpherical Head, furniſh'd with a common ſcaly Empalement: this Head is compoſed of ſeveral Clovegilliflower-flowers, conſiſting of ſeveral Leaves in a proper Empalement, ſhaped like a Funnel: in like manner, the Pointal riſes out of the ſame Empalement, and afterward turns to an oblong Seed, wrapt up in the Empalement, as in an Huſk.

The *Species* are;

1. Statice. *Lugd.* Thriſt, Sea-gilliflower, or Sea-cuſhion.

2. Statice *montana minor. Tourn.* Leſſer Mountain-thriſt, or Sea-gilliflower.

3. Statice *foliis anguſtioribus, flore rubro. Boerh. Ind.* Narrow-leav'd Thriſt, with red Flowers.

4. Statice *foliis anguſtioribus, flore albo. Boerh. Ind.* Narrow-leav'd Thriſt, with a white Flower.

5. Statice *Luſitanica fruticoſa maritima, magno flore. Tourn.* Shrubby *Portugal* Sea-thriſt, with a large Flower.

6. Statice *Luſitanica, ſcorzoneræ folio. Tourn. Portugal* Thriſt, with a Leaf like Scorzonera, or Vipers-graſs.

7. Statice *Luſitanica, capillaceo folio, major. Tourn.* Greater *Portugal* Thriſt, with a narrow Leaf.

8. Statice *maritima humillima, folio capillaceo rigido. Tourn.* The loweſt Sea-thriſt, with a very narrow ſtiff Leaf.

The firſt of theſe Plants grows wild in *Germany*, and ſome other inland Countries, in great Plenty; from whence it hath been brought to *England*; but the ſecond Sort is found wild in great Plenty in the ſalt Marſhes near the Sea, in divers Parts of *England*.

The third [illegible] been brought [illegible] *Alps*, or ſome [illegible] Parts; and [illegible] Beauty of their F[illegible] Gardens.

The fifth Sor[illegible] *England* than [illegible] Sorts; and is [illegible] the Gardens of [illegible] in collecting rare P[illegible]

The ſixth, ſeven[illegible] Sorts are Natives [illegible] *Spain*; but are [illegible] thrive in the open [illegible] theſe Sorts are preſerv[illegible] dens of thoſe who are c[illegible] lecting of rare Plants: [illegible] have but little Beauty, [illegible] much propagated in o[illegible]

The firſt four Sorts ha[illegible] miſcuouſly planted in G[illegible] make Edgings on the S[illegible] ders in the Flower-ga[illegible] which Purpoſe they were [illegible] in great Eſteem; but of [illegible] have been very juſtly rej[illegible] that Uſe; becauſe there w[illegible] ceſſity of tranſplanting theſe [illegible] every Year, otherwiſe they c[illegible] be kept within due Bounds: [illegible] where-ever a Plant fail'd, wh[illegible] no extraordinary thing, there [illegible] appear'd a large unſightly [illegible] however, tho' they are not [illegible] at preſent for that Purpoſe, [illegible] few Plants of the firſt, third, fo[illegible] and fifth Sorts ſhould have a [illegible] in ſome Part of the Flower-ga[illegible] for Variety; eſpecially the third [illegible] fourth, which are extreme h[illegible] Plants, and will grow in almoſt [illegible] Soil or Situation; and their Flo[illegible] will continue a long time in Be[illegible]ty.

All theſe Sorts may be propaga[illegible] by parting their Roots; the beſt time for which is in Autumn, that they may take ot before the Froſt, which ſe them to flower much than thoſe tranſplanted in ng; and the Plants will not much Danger of miſcarry- noſe are, eſpecially when the happens to prove dry. After lants have taken Root, they quire no farther Care, but to hem clear from Weeds; and following they will begin wer, which will continue in three Weeks or a Month, ed the Seaſon be not too hot y.

Portugal Sort is not ſo hardy ter of the former, tho' it will e the Cold of our ordinary rs very well in the open Air, ed it is planted in a dry Soil, warm Situation; but in very Froſts it is often deſtroyed. may alſo be propagated by gs or Slips, which ſhould be ed in a Bed of freſh Earth in pring, and water'd and ſhaded they have taken Root; after h they muſt be kept clear from s till *Michaelmas*, when they ld be planted either into Pots to heltered in Winter, or in ſome m Situation in the full Ground, re they may remain to flower.

This Plant will grow two or three t high, and become ſhrubby, pro- ed it be not injur'd by Cold.

STOCK-GILLIFLOWER. *Vide* Leucoium.

STOECHAS, Caſſidony, *French* avender, or Stickadore.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf; whoſe Upper-lip is upright, and cut in two, but the Under lip, or Beard, is cut into three Parts; but both are ſo divided, as at firſt to appear like a Flower cut into five Segments; out of whoſe Flower-cup riſes the Pointal, attended by four Embryoes, which afterward become ſo many roundiſh Seeds, incloſed in the Flower-cup: to theſe Marks muſt be added, That the Flowers are ranged in a various Series into ſcaly Heads; out of the Top of which peep ſome ſmall Leaves, which look very beautifully.

The *Species* are;

1. Stoechas *purpurea*. *C. B. P.* Purple Stœchas, or Caſſidony, commonly called *Arabian* Stœchas.

2. Stoechas *folio ſerrato*. *C. B. P.* Caſſidony, or *French* Lavender, with a ſerrated Leaf.

3. Stoechas *cauliculis non foliatis*. *C. B. P.* Caſſidony, or *French* Lavender, with long naked Flower-ſtalks.

The Heads of Flowers of the firſt Kind are uſed in ſome of the capital Medicines directed by the College of Phyſicians: theſe are commonly brought from the South Parts of *France*, where the Plants are in great Plenty; but they are very apt to take a Mouldineſs in their Paſſage, and ſo are not near ſo good for Uſe as thoſe which are gathered freſh in *England*, where they may be cultivated to great Advantage.

The ſecond and third Sorts are preſerved in many curious Gardens, for Variety; but they are not of any Uſe.

All theſe Plants may be cultivated by ſowing their Seeds upon a Bed of light dry Soil in *March*; and when the Plants are come up, they ſhould be carefully clear'd from Weeds until they are two Inches high; at which time they ſhould be removed; therefore there muſt be a Spot of light dry Ground prepared, and laid level, which muſt be trodden out in Beds; into which the Plants ſhould be planted at about five or ſix Inches Diſtance each Way, obſerving to water and ſhade them until they have taken Root; after which they will

STARWORT. *Vide* Aſter.

STATICE, Thrift or Sea-pink.

The *Characters* are;

It is a Plant with a Flower gather'd into an almoſt ſpherical Head, furniſh'd with a common ſcaly Empalement: this Head is compoſed of ſeveral Clovegilliflower-flowers, conſiſting of ſeveral Leaves in a proper Empalement, ſhaped like a Funnel: in like manner, the Pointal riſes out of the ſame Empalement, and afterward turns to an oblong Seed, wrapt up in the Empalement, as in an Huſk.

The *Species* are;

1. Statice. *Lugd.* Thrift, Sea-gilliflower, or Sea-cuſhion.
2. Statice *montana minor. Tourn.* Leſſer Mountain-thrift, or Sea-gilliflower.
3. Statice *foliis anguſtioribus, flore rubro. Boerh. Ind.* Narrow-leav'd Thrift, with red Flowers.
4. Statice *foliis anguſtioribus, flore albo. Boerh. Ind.* Narrow-leav'd Thrift, with a white Flower.
5. Statice *Luſitanica fruticoſa maritima, magno flore. Tourn.* Shrubby *Portugal* Sea-thrift, with a large Flower.
6. Statice *Luſitanica, ſcorzoneræ folio. Tourn.* *Portugal* Thrift, with a Leaf like Scorzonera, or Vipers-graſs.
7. Statice *Luſitanica, capillaceo folio, major. Tourn.* Greater *Portugal* Thrift, with a narrow Leaf.
8. Statice *maritima humillima, folio capillaceo rigido. Tourn.* The loweſt Sea-thrift, with a very narrow ſtiff Leaf.

The firſt of theſe Plants grows wild in *Germany*, and ſome other inland Countries, in great Plenty; from whence it hath been brought to *England*; but the ſecond Sort is found wild in great Plenty in the ſalt Marſhes near the Sea, in divers Parts of *England*.

The third and fourth Sorts have been brought into *England* from the *Alps*, or ſome other mountainous Parts; and are preſerved, for the Beauty of their Flowers, in ſome old Gardens.

The fifth Sort is leſs common in *England* than either of the former Sorts; and is only to be found in the Gardens of ſuch as are curious in collecting rare Plants.

The ſixth, ſeventh, and eighth Sorts are Natives of *Portugal* and *Spain*; but are hardy enough to thrive in the open Air in *England*: theſe Sorts are preſerved in the Gardens of thoſe who are curious in collecting of rare Plants: but as they have but little Beauty, they are not much propagated in other Gardens.

The firſt four Sorts have been promiſcuouſly planted in Gardens, to make Edgings on the Sides of Borders in the Flower-gardens; for which Purpoſe they were formerly in great Eſteem; but of late they have been very juſtly rejected for that Uſe; becauſe there was a Neceſſity of tranſplanting theſe Edgings every Year, otherwiſe they could not be kept within due Bounds: beſides, where-ever a Plant fail'd, which was no extraordinary thing, there always appear'd a large unſightly Gap: however, tho' they are not in Uſe at preſent for that Purpoſe, yet a few Plants of the firſt, third, fourth, and fifth Sorts ſhould have a Place in ſome Part of the Flower-garden, for Variety; eſpecially the third and fourth, which are extreme hardy Plants, and will grow in almoſt any Soil or Situation; and their Flowers will continue a long time in Beauty.

All theſe Sorts may be propagated by parting their Roots; the beſt time for which is in Autumn, that they may take Root before the Froſt, which will cauſe them to flower much ſtronger than thoſe tranſplanted in the Spring; and the Plants will not be in ſo much Danger of miſcarrying as thoſe are, eſpecially when the Spring happens to prove dry. After theſe Plants have taken Root, they will require no farther Care, but to keep them clear from Weeds; and the *May* following they will begin to flower, which will continue in Beauty three Weeks or a Month, provided the Seaſon be not too hot and dry.

The *Portugal* Sort is not ſo hardy as either of the former, tho' it will endure the Cold of our ordinary Winters very well in the open Air, provided it is planted in a dry Soil, and a warm Situation; but in very ſevere Froſts it is often deſtroyed. This may alſo be propagated by Cuttings or Slips, which ſhould be planted in a Bed of freſh Earth in the Spring, and water'd and ſhaded until they have taken Root; after which they muſt be kept clear from Weeds till *Michaelmas*, when they ſhould be planted either into Pots to be ſheltered in Winter, or in ſome warm Situation in the full Ground, where they may remain to flower.

This Plant will grow two or three Feet high, and become ſhrubby, provided it be not injur'd by Cold.

STOCK-GILLIFLOWER. *Vide* Leucoium.

STOECHAS, Caſſidony, *French* Lavender, or Stickadore.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf; whoſe Upper-lip is upright, and cut in two, but the Under lip, or Beard, is cut into three Parts; but both are ſo divided, as at firſt to appear like a Flower cut into five Segments; out of whoſe Flower-cup riſes the Pointal, attended by four Embryoes, which afterward become ſo many roundiſh Seeds, incloſed in the Flower-cup: to theſe Marks muſt be added, That the Flowers are ranged in a various Series into ſcaly Heads; out of the Top of which peep ſome ſmall Leaves, which look very beautifully.

The *Species* are;

1. STOECHAS *purpurea. C. B. P.* Purple Stœchas, or Caſſidony, commonly called *Arabian* Stœchas.

2. STOECHAS *folio ſerrato. C. B. P.* Caſſidony, or *French* Lavender, with a ſerrated Leaf.

3. STOECHAS *cauliculis non foliatis. C. B. P.* Caſſidony, or *French* Lavender, with long naked Flower-ſtalks.

The Heads of Flowers of the firſt Kind are uſed in ſome of the capital Medicines directed by the College of Phyſicians: theſe are commonly brought from the South Parts of *France*, where the Plants are in great Plenty; but they are very apt to take a Mouldineſs in their Paſſage, and ſo are not near ſo good for Uſe as thoſe which are gathered freſh in *England*, where they may be cultivated to great Advantage.

The ſecond and third Sorts are preſerved in many curious Gardens, for Variety; but they are not of any Uſe.

All theſe Plants may be cultivated by ſowing their Seeds upon a Bed of light dry Soil in *March*; and when the Plants are come up, they ſhould be carefully clear'd from Weeds until they are two Inches high; at which time they ſhould be removed; therefore there muſt be a Spot of light dry Ground prepared, and laid level, which muſt be trodden out in Beds; into which the Plants ſhould be planted at about five or ſix Inches Diſtance each Way, obſerving to water and ſhade them until they have taken Root; after which they will require no further Care, but to keep them clear from Weeds the following Summer; but if the Winter ſhould prove very ſevere, it will be proper to cover them with Mats, Peas-haulm, or ſome other light Covering, to guard them againſt the Froſt, which otherwiſe would be apt to injure them while they are ſo young: but in *March*, or the Beginning of *April*, the following Spring, they muſt be removed into the Places where they are to remain; obſerving, if poſſible, to tranſplant them in a warm moiſt Seaſon, and not to let them remain long above-ground; for if their Roots are dry'd, they ſeldom grow well after. The Soil in which theſe are planted ſhould be a dry warm Sand or Gravel; and the poorer the Soil is in which they are planted, the better they will endure the Cold of the Winter, provided the Ground be dry; tho' indeed the Plants will thrive better in Summer upon a rich moiſt Ground; but then they will not produce ſo many Flowers, nor will the Plant afford near ſo ſtrong an aromatic Scent; as is the Caſe with moſt Sorts of aromatic Plants.

Theſe Plants may alſo be propagated by planting Slips or Cuttings of any of the Kinds in the Spring, obſerving to refreſh them with Water until they have taken Root; after which they may be managed as hath been directed for the Seedling-plants; but as thoſe Plants, raiſed from Seeds, are much better than theſe, it is hardly worth while to propagate them this way, eſpecially ſince their Seeds ripen ſo well in this Country.

The Heads of the firſt Sorts may be gather'd for Uſe when the Flowers are in full Perfection, and ſpread to dry in a ſhady Place; after which they may be put up for Uſe.

STONECROP. *Vide* Sedum.

STONECROP-TREE. *Vide* Chenopodium.

STOVES are Contrivances for the preſerving ſuch tender Exotic Plants, as will not live in theſe Northern Countries, without artificial Warmth in Winter. Theſe are built in different Methods, according to the Ingenuity of the Artiſt, or the different Purpoſes for which they are intended; but in *England* they are at preſent reducible to two.

The firſt is call'd a Dry Stove, being ſo contriv'd, that the Flues through which the Smoke paſſes are are either carried under the Pavement of the Floor, or elſe are erected in the Back-part of the Houſe, over each other, and are returned ſix or eight times the whole Length of the Stove. In theſe Stoves the Plants are placed on Shelves of Boards laid on a Scaffold above each other, for the greater Advantage of their ſtanding in Sight, and enjoying an equal Share of Light and Air. In theſe Stoves are commonly placed the tender Sorts of Aloes, Cereus's, Euphorbiums, Tithymals, and other ſucculent Plants, which are impatient of Moiſture in Winter; and therefore require, for the moſt part, to be kept in a ſeparate Stove, and not placed among Trees, or herbaceous Plants, which perſpire freely, and thereby often cauſe a damp Air in the Houſe, which is imbibed by the ſucculent Plants, to their no ſmall Prejudice. Theſe Stoves may be regulated by a Thermometer, ſo as not to over-heat them, nor to let the Plants ſuffer by Cold; in order to which, all ſuch Plants as require nearly the ſame Degree of Heat, ſhould be placed by themſelves in a ſeparate Houſe; for if in the ſame Stove there are Plants placed of many different Countries, which require as many different Heats, by making the Houſe warm enough for ſome Plants; others, by having too much Heat, are drawn and ſpoil'd.

The other Sort of Stoves are commonly call'd Bark Stoves, to diſtinguiſh them from the Dry Stoves already mention'd. Theſe have a large Pit, nearly the Length of the Houſe, three Feet deep, and ſix or ſeven Feet wide; according to the Breadth of the Houſe; which Pit is fill'd with freſh Tanners Bark to make an Hot-bed; and in this Bed the Pots of the moſt tender Exotic Trees, and herbaceous Plants, are plunged: the Heat of this Bed being moderate, the Roots of the Plants are always kept in Action; and the Moiſture detain'd by the Bark keeps the Fibres of their Roots in a ductile State, which in the Dry Stove, where they are placed on Shelves, are ſubject to dry too faſt, to the great Injury of the Plants. In theſe Stoves, if they are rightly contriv'd, may be preſerved the moſt tender Exotic Trees and Plants, which, before the Uſe of the Bark was introduced, were thought impoſſible to be kept in *England*: but as there is ſome Skill required in the Structure of both theſe Stoves, I ſhall not only deſcribe them as intelligibly as poſſible, but alſo annex a Plan of the Bark Stove hereto; by which it is hoped every curious Perſon will be capable of directing his Workmen in their Structure.

The Dimenſion of this Stove ſhould be proportion'd to the Number of Plants intended to be preſerved, or the particular Fancy of the Owner; but their Length ſhould not exceed forty Feet, unleſs there are two Fire-places; and in that Caſe it will be proper to make a Partition of Glaſs in the Middle, and to have two Tan pits, that there may be two different Heats for Plants from different Countries (for the Reaſons before given in the Account of the Dry Stoves); and were I to erect a Range of Stoves, they ſhould be all built in one, and only divided with glaſs Partitions, at leaſt the half way toward the Front; which will be of great Advantage to the Plants, becauſe they may have the Air in each Diviſion ſhifted by ſliding the Glaſſes of the Partitions, or by opening the Glaſs-door, which ſhould be made between each Diviſion, for the more eaſy Paſſage from one to the other.

This Stove ſhould be raiſed above the Level of the Ground, in proportion to the Drineſs of the Place; for if it be built on a moiſt Situation, the Whole ſhould be placed upon the Top of the Ground; ſo that the Brick-work in Front muſt be raiſed three Feet above the Surface, which is the Depth of the Bark-bed, whereby none of the Bark will be in Danger of lying in Water; but if the Soil be dry, the Brick-work in Front need not be more than one Foot above-ground, and the Pit may be ſunk two Feet below the Surface. Upon the Top of this Brick-work in Front muſt be laid the Plate of Timber, into which the Wood-work of the Frame is to be mortiſed; and the upright Timbers in Front muſt be placed three Feet aſunder in the Clear, or ſomewhat more, which is the Proportion of the Width of the Glaſs-doors or Saſhes: theſe ſhould be about ſix Feet and an half, or ſeven Feet long, and plac'd upright; but from the Top of theſe ſhould be ſloping Glaſſes, which ſhould reach within three Feet of the Back of the Stove, where there ſhould be a ſtrong Crown-piece of Timber placed, in which there ſhould be a Groove made for the Glaſſes to ſlide into. The Wall in the Back-part of the Stove ſhould be at leaſt thirteen Inches thick; but eighteen Inches is ſtill better; becauſe the thicker the outſide Wall is built, the more the Heat of the Flues will be kept in the Houſe; and carried up, about nine Feet above the Surface of the Bark-bed; and from the Top of this Wall, there ſhould be a ſloping Roof to the Crown-piece where the Glaſſes ſlide in. This Crown-piece ſhould be about ſixteen Feet high from the Surface of the Bark-bed or Floor, which will give a ſufficient Declivity to the ſloping Glaſſes to carry off the Wet, and be of a reaſonable Height for containing Plants of a moderate Size. The Back-roof may be ſlated, cover'd with Lead, or tiled, according to the Fancy of the Owner: but the Manner of this outſide Building is better expreſt'd by the annex'd Plan, than is poſſible to be deſcribed in Words.

In the Front of the Houſe there ſhould be a Walk, about eighteen or twenty Inches wide, for the Conveniency of walking; next to which the Bark-pit muſt be placed, which ſhould be in Width proportionable to the Breadth of the Houſe: if the Houſe is twelve Feet wide, which is a due Proportion, the Pit may be ſeven Feet wide; and behind the Pit ſhould be a Walk eighteen Inches wide, to paſs in order to water the Plants, *&c.* then there will be twenty-two Inches left next the Back-wall, to erect the Flues, which muſt be all raiſed above the Top of the Bark bed: theſe Flues ought to be one Foot wide in the Clear, that they may not be too ſoon ſtopped with the Soot; and the lower Flue, into which the Smoke firſt enters from the Fire, ſhould be two Feet deep in the Clear; and this may be covered with broad Tiles; over this the ſecond Flue muſt be returned back again; which may be eighteen Inches deep, and covered on the Top as before; and ſo in like manner the Flues may be returned over each other three or four times, that the Heat may be ſpent before the Smoke paſſes off. The Thickneſs of the Wall in Front of theſe Flues need not be more than four Inches; but it muſt be well jointed with Morter, and plaſter'd withinſide to prevent the Smoke from getting into the Houſe; and the Outſide ſhould be plaſtered with Morter, and covered with a coarſe Cloth to keep the Morter from cracking, as it is practis'd in ſetting up Coppers: if this be carefully done, there will be no Danger of the Smoke entering the Houſe, which can't be too carefully guarded againſt; for there is nothing more injurious to Plants than Smoke, which will cauſe them to drop their Leaves; and if it continue long in the Houſe, will intirely deſtroy them.

The Fire-place may be made either at one End, or in the Middle, according as there is moſt Conveniency; for where-ever it is plac'd, it ſhould have a Shed over it, and not be expoſed to the open Air; for it will be impoſſible to make the Fire burn equally, where the Wind has full Ingreſs to it; and it will be troubleſome to attend the Fire in wet Weather, where it is expos'd to the Rain.

The Contrivance of the Furnace muſt be according to the Fuel which is deſign'd to burn: but as Turf is the beſt Firing for Stoves, where it can be had, becauſe it burns more moderately, and laſts longer, than any other Sort of Fuel, and ſo requires leſs Attendance, I ſhall deſcribe a proper Sort of Furnace for that Purpoſe.

The Whole of this Furnace ſhould be erected within the Houſe, which will be a great Addition to the Heat; and the Front Wall on the Outſide of the Fire-place, next the Shed, ſhould be three Bricks thick, the better to prevent the Heat from coming out that Way. The Door of the Furnace, at which the Fuel is put in, muſt be as ſmall as conveniently may be to admit of the Fuel; and this Door ſhould be plac'd near the Upper-part of the Furnace, and made to ſhut as cloſe as poſſible; ſo that there may but little of the Heat paſs off thro' it. This Furnace ſhould be about twenty Inches deep, and ſixteen Inches ſquare at Bottom; but may be ſlop'd off on every Side, ſo as to be two Feet ſquare at the Top; and under this Furnace ſhould be a Place for Aſhes to fall into, which ſhould be about a Foot deep, and as wide as the Bottom of the Furnace: this ſhould alſo have an iron Door to ſhut as cloſe as poſſible; but juſt over the Aſh-hole, above the Bars which ſupport the Fuel, ſhould be a ſquare Hole about four Inches wide, to let in Air to make the Fire burn: this muſt alſo have an iron Frame, and a Door to ſhut cloſe when the Fire is perfectly lighted, which will make the Fuel laſt the longer, and the Heat will be more moderate.

The Top of this Furnace ſhould be nearly equal to the Top of the Bark-bed, that the loweſt Flue may be above the Fire; ſo that there may be a greater Draught for the Smoke; and the Furnace ſhould be arched over with Bricks: but you ſhould be very careful, where-ever the Fire is plac'd, that it be not too near the Bark-bed; for the Heat of the Fire will, by its long Continuance, dry the Bark, ſo that it will loſe its Virtue, and be in Danger of taking Fire; to prevent which, it will be the beſt Method to continue an Hollow between the Brick-work of the Fire and that of the Pit, about eight Inches wide; which will effectually prevent any Damage ariſing from the Heat of the Fire; and there ſhould be no Wood-work plac'd any where near the Flues, or the Fire-place, becauſe the continual Heat of the Stove may in time dry it ſo much, as to make it take Fire; which ought to be very carefully guarded againſt.

The Entrance into this Stove ſhould be either from a Green-houſe, the Dry Stove, or elſe thro' the Shed where the Fire is made, becauſe in cold Weather the Front-glaſſes muſt not be open'd. The Inſide of the Houſe ſhould be clean white-waſhed: becauſe the whiter the Back-part of the Houſe is, the better it will reflect the Light; which is of great Conſequence to Plants, eſpecially in Winter, when the Stove is obliged to be ſhut up cloſe.

Over the top Sliding-glaſſes there ſhould be either wooden Shutters, or Tarpawlins fix'd in Frames, to cover them in bad Weather, to prevent the Wet from getting thro' the Glaſſes, and to ſecure them from being broken by Storms and Hail; and theſe outer Coverings will be very ſerviceable to keep out the Froſt; and if in very ſevere Cold there is a Tarpawlin hung before the upright Glaſſes in the Front, it will be of great Service to the Stove; and a much leſs Fire will preſerve an Heat in the Houſe.

In the warmeſt of theſe Houſes or Diviſions ſhould be placed the moſt tender Exotic Trees and Plants; which are Natives of very warm Countries: theſe ſhould be plunged in the Bark-bed for the Reaſons already aſſign'd; and upon the Top of the Flues may be ſet the Melon-thiſtle, the tender Sorts of Cereus's, and Euphorbiums, with other very tender ſucculent Plants, which require to be kept dry in Winter.

As in this Stove are plac'd the Plants of the hotteſt Parts of the *Eaſt* and *Weſt-Indies*, ſo the Heat ſhould be kept up equal to that mark'd *Anana* upon the Botanical Thermometers, and ſhould never be ſuffered to be above eight or ten Degrees cooler at moſt; nor ſhould the Spirit be raiſed above ten Degrees higher in the Thermometer during the Winter-ſeaſon; both which Extremes will be equally injurious to the Plants.

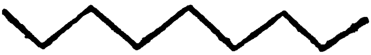
But in order to judge more exactly of the Temper of the Air in the Stove, the Thermometer ſhould be hung up at a good Diſtance from the Fire; nor ſhould the Tube be expos'd to the Sun; but on the contrary, the Back hung thereto; becauſe whenever the Sun ſhines upon the Ball of the Thermometer but one ſingle Hour, it will raiſe the Liquor in the Tube conſiderably, when, perhaps, the Air of the Houſe is not near ſo warm; which deceives thoſe who are not aware of this.

In the Management of the Plants placed in the Bark-bed, there muſt be a particular Regard had to the Temper of the Bark, and the Air of the Houſe, that neither be too violent; as alſo to water them frequently; becauſe when they are in a continual Warmth, which will cauſe them to perſpire freely, if they have not a conſtant Supply to anſwer their Diſcharge, their Leaves will decay, and ſoon fall off. As to the farther Directions concerning the Culture of the particular Plants, the Reader is deſired to turn to their ſeveral Articles, where they are diſtinctly treated of.

The other Sort of Stove, which is commonly call'd the Dry Stove, as was before ſaid, may be either built with upright and ſloping Glaſſes at the Top, in the ſame manner, and after the ſame Model, as the Bark Stove; or elſe the Front-glaſſes, which ſhould run from the Floor to the Cieling, maybe laid ſloping, to an Angle of 45 Degrees, the better to admit the Rays of the Sun in Spring and Autumn: the latter Method has been chiefly follow'd by moſt Perſons who have built theſe Sort of Stoves: but were I to have the Contrivance of a Stove of this Kind, I would have it built after the Model of the Bark Stove, with upright Glaſſes in Front, and ſloping Glaſſes over them, becauſe this will more eaſily admit the Sun at all the different Seaſons; for in Summer, when the Sun is high, the top Glaſſes will admit the Rays to ſhine almoſt all over the Houſe; and in Winter, when the Sun is low, the front Glaſſes will admit its Rays; whereas when the Glaſſes are laid to any Declivity in one Direction, the Rays of the Sun will not fall directly thereon above a Fortnight in Autumn, and about the ſame time in Spring; and during the other Parts of the Year they will fall obliquely thereon; and in Summer, when the Sun is high, the Rays will not reach above five or ſix Feet from the Glaſſes: beſides, the Plants which are plac'd toward the Back-part of the Houſe will not thrive in the Summer-ſeaſon for want of Air; whereas when there are ſloping Glaſſes at the Top, which run within four Feet of the Back of the Houſe; theſe, by being drawn down in hot Weather, will let in perpendicular Air to all the Plants; and of how much Service this is to all Sorts of Plants, every one who has had Opportunity of obſerving the Growth of

Plants in a Stove will eaſily judge; for when Plants are plac'd under Cover of a Cieling, they always turn themſelves toward the Air and Light, and thereby grow crooked; and if, in order to preſerve them ſtrait, they are turn'd every Week, they will nevertheleſs grow week, and look pale and ſickly, like a Perſon ſhut up in a Dungeon; for which Reaſons, I am ſure, whoever has made Trial of both Sorts of Stoves, will readily join with me to recommend the Model of the Bark Stove for every Purpoſe.

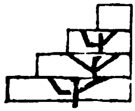
As to the farther Contrivance of this Stove, it will be neceſſary to obſerve the Situation of the Place, whether the Ground be dry or wet; if it be dry, then the Floor need not be rais'd above one Foot above the Level of the Ground; but if it be wet, it will be proper to raiſe it three Feet; eſpecially if theſe Flues are to be carried under the Floor; for when they are erected cloſe upon the Surface of the Ground, they will raiſe a Damp; nor will the Flues draw ſo well as when they are more elevated. The Furnace of this Stove may be either placed at one End of the Houſe, or at the Back-part thereof, according to the Conveniency of the Building. This muſt be made according to the Fuel intended to burn; which, if for Coals or Wood, may be made according to the common Method for Coppers, but only much larger; becauſe, as the Fire is to be continued in the Night chiefly, ſo, if there is not room to contain a great Quantity of Fuel, it will occaſion a great deal of Trouble in attending to the Fire in the Night, which ſhould be avoided as much as poſſible; becauſe whenever the Trouble is made very great or difficult, and the Perſon who is entruſted with the Care of it, has not a very great Affection for the Thing, and is withal not very careful, there will be great Hazard of the Fire being neglected, which in a little time would be of dangerous Conſequence to the Plants: but if the Fuel intended be Turf, then the Contrivance of the Furnace may be the ſame as for the Bark Stove already mention'd. The Flues of this Stove ſhould be turn'd in Angles, after the following Manner; which will cauſe them to draw better than if ſtrait; and by this Method of diſpoſing them, they will reach from the Back to the Front of the Houſe.



The Depth of them ſhould not be leſs than eighteen Inches, and the Width nearly equal, which will prevent their being choak'd up with Soot; as is often the Caſe when the Flues are made too ſmall. The Spaces between the Flues ſhould be fill'd up either with dry Brick Rubbiſh, Lime, or Sand, from which there will little Moiſture ariſe; and the Flues ſhould be cloſely plaſter'd with Loam both within and without; and the Upper-part of them cover'd with a coarſe Cloth under the Floor, to prevent the Smoke from getting into the Houſe.

When the Flue is carried from the Furnace to the End of the Houſe, it may be return'd in the Back above the Floor in a ſtrait Line, which may be contriv'd to appear like a Step or two; by which means the Smoke will be continu'd in the Houſe until all its Heat is ſpent, which will conſequently warm the Air of the Houſe the better; and the Chimneys thro' which the Smoke is to paſs off, may be either at both Ends, or in the Middle, carry'd up in the Thickneſs of the Brick-work of the Back-Wall, ſo as not to appear in Sight in the Houſe: the Flues ſhould be firſt cover'd either with iron Plates, or broad Tiles, and then a Bed of Sand over them about two Inches thick; upon which the plain Tiles ſhould be laid to correſpond with the reſt of the Floor. This Thickneſs of Cover will be full enough to prevent the too ſudden Riſe of the Heat from the Flues.

But if the Furnace is plac'd under the Floor, the Thickneſs of Sand between the iron Plate which covers it and the Floor, ſhould not be leſs than four Inches; ſo that the Bottom of the Furnace ſhould be ſunk the lower: and if from the Fire-place to the End of the Houſe, the Flues are laid a little riſing, it will cauſe them to draw the better; but this Riſe muſt be allow'd in the placing them lower under the Floor next the Fire, becauſe the Floor muſt be laid perfectly level, otherwiſe it will appear unſightly.



In this Stove there ſhould be a Stand or Scaffold erected for placing Shelves above each other, in the manner annex'd, that the Plants may be diſpoſed above each other; ſo as to make an handſome Appearance in the Houſe; but theſe Shelves ſhould be made moveable, ſo as to to be rais'd or ſunk, according to the various Heights of the Plants; otherwiſe it will be very troubleſome to raiſe or ſink every particular Plant, according to their Heights, or every Year as they advance.

In placing the Feet of this Stand, you muſt be careful not to ſet them too near the Fire, nor directly upon the Top of the Flue, eſpecially at that End next the Fire, leſt by the conſtant Heat of the Tiles the Wood ſhould take Fire, which can't be too much guarded againſt; ſince ſuch an Accident would go near to deſtroy all the Plants, if the Houſe eſcaped being burnt. This Stand or Scaffold ſhould be plac'd in the Middle of the Houſe, leaving a Paſſage about two Feet and an half in the Front, and another of the ſame Width in the Back, for the more conveniently paſſing round the Plants to water them; and that the Air may freely circulate about them. In diſpoſing the Plants, the talleſt ſhould be placed backward, and the ſmalleſt in Front; ſo that there will not be Occaſion for more than five or ſix Shelves in Height at moſt: but the Scaffold ſhould be ſo contriv'd, that there may be two or three Shelves in Breadth laid upon every Riſe whenever there may be Occaſion for it, which will ſave a deal of Trouble in diſpoſing of the Plants.

In the Erection of theſe Stoves, it will be of great Service to join them all together, with only glaſs Partitions between them, as was before obſerv'd; and where ſeveral of theſe Stoves and Green-houſes are required in one Garden, then it will be very proper to have the Green-houſe in the Middle, and the Stoves at each End, either in the manner directed in the Plan of the Green-houſe exhibited in that Article, or carry'd on in one ſtrait Front.

By this Contrivance in the Structure of theſe Houſes, a Perſon may paſs from one to the other of them, without going into the open Air; which, beſides the Pleaſure to the Owner, is alſo of great Uſe, becauſe there will be no occaſion of making a Back-way into each of them, which otherwiſe muſt be, ſince the Front-glaſſes of the Stove ſhould not be open'd in cold Weather, if it can poſſibly be avoided on any Account; otherwiſe the cold Air ruſhing in, will greatly prejudice the very tender Plants.

But beſides the Stoves here deſcrib'd, and the Green-houſe, it will be very neceſſary to have a Glaſs-caſe or two, where-ever there are great Collections of Plants. Theſe may be built exactly in the manner already deſcribed for the Stoves, with upright Glaſſes in Front, and ſloping Glaſſes over the Top of them, which ſhould run within four Feet of the Back of the Houſe. The Height, Depth, and other Dimenſions, ſhould be conformable to that of the Stoves, which will make a Regularity in the Building. Theſe may be plac'd at the End of the Range on each Hand beyond the Stoves; and if there be a Flue carried round each of theſe, with an Oven to make a Fire in very cold Weather, it will ſave a great deal of Labour, and prevent the Froſt from ever entering the Houſe, be the Winter ever ſo ſevere: but the upper Glaſſes of theſe Houſes ſhould have either Shutters to cover them, or elſe Tarpawlins to let down over them in froſty Weather; and if there is a Contrivance to cover the upright Glaſſes in Froſt, either with Mats, Shutters, or Tarpawlins, it will be of great Uſe in Winter, otherwiſe the Flue muſt be uſed when the Froſt comes on; which ſhould not be done, but upon extraordinary Occaſions; becauſe the Deſign of theſe Houſes is, to keep ſuch Plants as require only to be preſerved from Froſt, and need no additional Warmth; but, at the ſame time, require more Air than can conveniently be given them in a Green-houſe; in one of theſe Houſes may be plac'd all the Sorts of Ficoides, *African* Sedums, Cotyledons, and other ſucculent Plants from the *Cape of Good Hope*. In the other may be plac'd the ſeveral Kinds of *Anemonoſpermos's*, *Jacobæas*, *Dorias*, *Alaternoides's*, and other woody or herbaceous Plants from the ſame Country, or any other in the ſame Latitude.

Thus by contriving the Green-houſe in the Middle, and one Stove and a Glaſs-caſe at each End, there will be Conveniency to keep Plants from all the different Parts of the World, which can be no otherwiſe maintain'd but by placing them in different Degrees of Heat, according to the Places of their native Growth.

The Stoves before deſcribed are ſuch as are uſually built to maintain Exotic Plants, which will not live in *England*, unleſs they enjoy a Temperature of Air approaching to that of the ſeveral Countries from whence they are brought; therefore whoever is inclinable to preſerve a large Collection of Plants from different Countries, muſt contrive to have two or three of theſe Stoves; each of which ſhould be kept in a different Temperature of Warmth; and the Plants ſhould be alſo adapted to the ſeveral Degrees of Heat, as they ſhall require, to preſerve them: but as the far greateſt Number of Stoves, which have been erected in *England*, are deſign'd for the Culture of the *Ananas* only; ſo I ſhall add a Deſcription and Plans of two Sorts of Stoves, of the leaſt Expence in Building for this Purpoſe; ſo that whoever are inclinable to erect a Stove for ripening of the *Ananas*, may, by attending to the Plans and Deſcriptions, direct the building and contriving ſuch Stoves as they are deſirous to have; or according to the Number of Fruit propoſed to ripen annually.

The firſt Sort of Stove is that which is deſign'd for the Plants which produce the Fruit the ſame Year; for as the Plants do not generally fruit until the ſecond Year from their being taken from the old Plants, whether they are Suckers from the Side of the Plants, or Crowns taken from the Fruit; if they fruit the ſucceeding Year, the Fruit will be ſmall; therefore when they are properly managed, they will not produce their Fruit until the ſecond Year; by which time they will have obtained Strength to produce large Fruit, in which their greateſt Value conſiſts: for altho' there are ſeveral Varieties of this Fruit, which differ in Degrees of Goodneſs, as in moſt other Fruits; yet they may all of them be improved in the Size, without diminiſhing of their Excellence in Taſte; tho' I know there are ſome Perſons of a contrary Opinion, and who believe, that the ſmall Fruit are always better flavour'd than the large: but from long Experience I can aſſert, that the larger and better nouriſh'd this Fruit is, the higher will be its Flavour, ſuppoſing the Sorts are the ſame; therefore every Perſon who cultivates this Fruit, ſhould endeavour to have it improved to the greateſt Perfection; in order to which, it will be proper to have a ſmall Stove, in which the young Plants may be placed to bring them forward for fruiting; and afterward they ſhould be removed into the larger Stove for ripening: but I ſhall return to the Deſcription of the larger Stove. The Length of this muſt be proportionable to the Quantity of Fruit deſired in one Seaſon; for, as to their Width, that ſhould not be much varied; the Tan-bed ſhould never be narrower than ſix, nor ſhould it be more than ſeven, Feet wide; and if there is room enough on each Side of the Bed for a Walk a Foot, or at moſt a Foot and an half, broad, it will be ſufficient for Perſons to water and do every thing which is neceſſary to the Plants: and as theſe Places are not deſign'd for walking in, it is to no Purpoſe to have broad Walks, which will take up too much Space; and the Fires muſt be larger, in proportion to the Space of the Houſe; otherwiſe the Air cannot be kept in a proper Temperature of Warmth. If the Stove is made thirty-ſix Feet long in the Clear, then the Tan-bed may be thirty-three Feet long, and a Walk left at each End a Foot and an half wide; which will be ſufficient to walk round the Bed to water and attend the Plants; and ſuch a Tan-bed will contain an hundred Fruiting-plants very well, if the Bed is ſeven Feet wide; and this Stove may be very well warmed with one Fire; but if the Stove is built much larger, there muſt be two Fire-places contrived, one at each End; otherwiſe the Air of the Houſe cannot be kept in a proper Temperature of Heat. The Quantity of Fuel which will be wanting for a Stove of thirty-ſix Feet long in the Clear, is about three Chaldron and an half of Coals, or in ſuch proportion for any other Sort of Fuel, where Coals can be had reaſonably: it is the beſt Kind of Fuel; and the Pit or *Scotch* Coal is preferable to the *Newcaſtle* Coal, becauſe the latter is very ſubject to melt, or run into Clinkers, when the Oven is very hot; which the Pit-coal never does, but always burns away with a white Aſh, making but little Soot: ſo that the Flues will not require to be ſo often cleaned, as when the other Coal is uſed. The next beſt Fuel for Stoves is Peat, where it can be procured good. There are ſome Perſons who burn Wood in their Stoves; but this Fuel requires much greater Attendance than any other; therefore is not very proper for this Purpoſe: but in the building of the Stoves, the Ovens muſt be contrived for the Sort of Fuel which is to be uſed in them: but theſe will be afterward deſcribed; and the Places where they ſhould be ſituated are delineated in the Plan.

The Stoves deſign'd for ripening the Fruit of the *Ananas* ſhould have upright Glaſſes in their Front, which ſhould be high enough to admit a Perſon to walk upright under them on the Walk in the Front of the Houſe; or where this cannot be admitted, the front Walk may be ſunk one Foot lower than that on the Back of the Tan-bed; ſo that the Surface of the Bed will be a Foot above the Walk, which will be rather an Advantage, as the Plants will be ſo much nearer the Glaſs; and a Perſon may with great Eaſe water and attend the Plants, when they are thus raiſed above the Walk; therefore when a Stove is ſo ſituated, as that the raiſing of it high above-ground, might be attended with Inconvenience, the Walks quite round the Tan-bed may be ſunk a Foot or eighteen Inches below the Top of the Bed; which will admit of the Stove being built ſo much lower; for if there is Height for a Perſon to walk under the Glaſſes, it will be as much as is required: but as the Flues, when returned four times againſt the Back-wall, will riſe near ſeven Feet; ſo the Bottom of the lower Flue ſhould be on the ſame Level with the Walk, to admit of room enough for the Whole under the Roof. Over the upright Glaſſes there muſt be a Range of ſloping Glaſſes, which muſt run to join the Roof; which ſhould come ſo far from the Back-wall, as to cover the Flues, and the Walk behind the Tan-pit; for if the ſloping Glaſſes are of Length ſufficient to reach nearly over the Bed, the Plants will require no more Light; therefore theſe Glaſſes ſhould not be longer than is abſolutely neceſſary, which will render them more manageable than when they are longer: but the annexed Plan will render this more intelligible than any written Deſcription can do.

The other Sort of Stove, which is deſign'd for raiſing of young Plants, until they are of a proper Size to produce Fruit, need not be built ſo high as the former; therefore there will not be wanting any upright Glaſſes in the Front; but the Frames may be made in one Slope, as in the annexed Plan: indeed, of late Years, many Perſons have made Tan-beds, with two Flues running thro' the Back-wall, to warm the Air in Winter: and theſe Beds have been covered with Glaſſes, made in the ſame manner as thoſe for common Hot-beds, but larger: theſe were contrived to ſave Expence, and have in many Places anſwered the Intention: but to theſe there are ſeveral Objections: 1. That of having no Paſſage into them; ſo that the Glaſſes muſt be taken off, when the Plants want Water, *&c.* 2. The Damps very often riſe in the Winter-ſeaſon, when the Glaſſes are cloſely ſhut, which often proves very injurious to the Plants: 3. There is Danger of the Tan taking Fire, where there is not great Care taken that it doth not lie near the Flues; ſo that altho' the ſmall Stoves here propoſed require more Expence in their Building; yet being greatly preferable to thoſe Pits, and the after Expence being the ſame, they will be found ſo much more convenient, as to render them more general where this Fruit is cultivated.

Where there is no Danger of the Wet ſettling about the Tan in Winter, the Bark-pit may be ſunk two Feet deep in the Ground, and raiſed one Foot above the Surface: the only Walk which is neceſſary in theſe Stoves, is that on the Back of the Tan-bed, which may be on the Level with the Surface of the Ground; ſo that the Tan-bed will be raiſed one Foot higher; and the Flues beginning from the Walk, there will be room to return them three times; which will warm the Air much more with the ſame Fire, than when they are carried but twice the Length of the Stove.

But in wet Land the Tan-bed ſhould be wholly raiſed above the Level of the Ground, in order to preſerve the Tan from being chill'd by Moiſture; and in ſuch Places the Walk on the Back ſhould be raiſed near two Feet above the Level of the Ground; becauſe the Tan-bed ſhould not riſe much more than one Foot above the Walk; for if it is higher, it will be more difficult to reach the Plants when they require Water: the Brick-wall of the Pit, on the Side next the Walk, need not be more than four Inches thick, ſo far as riſes above the Walk; but below that, it ſhould be nine Inches thick: the Reaſon for reducing the Wall above, is to gain room for the Walk, which would otherwiſe be too much contracted; and if there is a Kirb of Oak laid on the Top of the four-inch Wall, it will ſecure the Bricks from being diſplaced, and ſufficiently ſtrengthen the Wall; which, being but one Foot above the Walk, will not be in any Danger of falling; and on this Kirb there may be two or three upright iron Bars fix'd with Claws, to ſupport the Crown-piece of Timber, which will ſecure it from hanging in the Middle, which, in a great Length, is very often the Caſe, where there are no Supports placed under it: there may be more or leſs of theſe Bars, according to the Length of the Stove; but if they are at about ten Feet aſunder, it will be near enough: if theſe iron Bars are one Inch ſquare, they will be ſtrong enough to anſwer the Deſign.

But as it is hoped, that the annexed Plan of this ſmall Stove will convey a clear Idea of the whole Contrivance; this will render it unneceſſary to add any farther Deſcription here.

STRAMONIUM, Thorn-apple.

The *Characters* are;

The Flower conſiſts of one Leaf, ſhap'd like a Funnel, and cut into ſeveral Segments: out of the Flower-cup riſes the Pointal, which, when the Flower decays, becomes a roundiſh Fruit, arm'd, for the moſt part, with ſharp Thorns, and divided into four Cells form'd by a Partition, diſpos'd in the Figure of a Croſs, furniſh'd with four Placenta's, *or nutritive Membranes, to which ſeveral kidney-ſhap'd Seeds adhere.*

The *Species* are;

1. STRAMONIUM *fructu ſpinoſo rotundo, flore albo ſimplici. Tourn.* Thorn-apple with a round prickly Fruit, and a ſingle white Flower.

2. STRAMONIUM *fructu ſpinoſo oblongo, caule & flore violaceo. Boerh. Ind.* Thorn-apple with a longiſh prickly Fruit, and violet-colour'd Stalks and Flowers.

3. STRAMONIUM *ferox. Boccon.* Thorn-apple with very long ſharp Prickles.

4. STRAMONIUM *Americanum minus, alkekengi folio. Tourn.* Leſſer

American Thorn-apple, with a Winter-cherry-leaf.

5. Stramonium *Malabaricum, fructu glabro, flore ſimplici violaceo. Tourn. Malabar* Thorn-apple, with a ſmooth Fruit, and a ſingle violet-colour'd Flower.

6. Stramonium *fructu ſpinoſo rotundo, flore violaceo duplici vel triplici. Tourn.* Thorn-apple with a round prickly Fruit, and violet-colour'd Flowers, which are two or three times double.

7. Stramonium *fructu ſpinoſo rotundo, flore albo pleno. Inſt. R. H.* Thorn-apple with a round prickly Fruit, and a double white Flower.

8. Stramonium *Malabaricum, fructu glabro, flore ſimplici albo. Malabar* Thorn-apple, with a ſmooth Fruit, and a ſingle white Flower.

The firſt Sort is us'd to make a cooling Ointment, which is greatly eſteem'd by many Perſons. This, though not a Native of this Country, yet is now become ſo common upon Dunghils, and other rich Grounds, as not to be eaſily eradicated. The Seeds falling, continue all the Winter in the Ground; and in the Spring, the Plants will come up, and, if ſuffer'd to ſtand, will ſpread over the whole Spot of Ground, and produce ſuch Quantities of Seeds, as to leave a Stock to furniſh the Ground for ſome Years.

The ſecond Sort is not as yet quite ſo common as the former, tho' it is equally as hardy; and where the Seeds are permitted to fall, the Plants will come up in great Plenty the following Summer. This Sort will grow much larger than the former. I have meaſur'd one of theſe Plants, which grew upon a rich Soil, upward of ſix Feet high, and divided into many ſtrong Branches, which ſpread almoſt eight Feet Diameter; ſo that it is unfit to ſtand in ſmall Pleaſure gardens, and fit only to have a Place in ſome outward Part of the Garden or Yard; becauſe it takes up too much room.

The third Sort is ſomewhat like the former in the Appearance of the Plant; but the Fruit is larger, and beſet with very long ſharp Thorns; for which Variety, it is preſerv'd in the Gardens of thoſe who are curious in Botany.

This Sort is not quite ſo hardy as the two former; ſo muſt be ſown on a moderate Hot-bed in the Spring; and when the Plants are come up, they ſhould be tranſplanted on a new Hot-bed to bring the Plants forward; but you muſt be careful not to draw them too much by keeping the Glaſſes cloſe; which will render them very weak, and unfit to ſtand abroad: therefore after they have taken Root, they ſhould have plenty of freſh Air when the Weather is warm; and in *May* they ſhould be enur'd to the open Air by degrees, into which they may be tranſplanted in *June*; obſerving to raiſe the Plants with a large Ball of Earth, and plant them in a rich Soil, giving them Water until they have taken Root. In *July* theſe Plants will flower, and their Seeds will ripen in *Auguſt*.

The fourth Sort will grow larger than the laſt-mention'd. This is preſerv'd more for the ſake of its long tubulous white Flowers, than any other Beauty in the Plant. It is ſomewhat tender, and ſhould be ſown on an Hot-bed in the Spring, and managed as the former; otherwiſe, if the Seaſon proves cold, the Seeds will not ripen; tho' I have ſometimes had Plants of this Kind, which came up from Seeds that ſcatter'd in Autumn, and ripen'd their Seeds very well; ſo that I believe, in a few Years, it may be enur'd to this Climate, and thrive with little Care.

The fifth and ſixth Sorts produce very beautiful Flowers, which afford an agreeable Scent at ſome Diſtance; but if ſmelt to very cloſe, it is offenſive to the Head. The Flowers of theſe Kinds are violet-colour'd on the Outſide, but are white on the Inſide; and thoſe of the ſixth Sort have two or three Flowers within each other, in the manner of the Primroſe, which is call'd *Hoſe in Hoſe*. Theſe two Sorts are much more tender than either of the former, and muſt be ſown early in the Spring on an Hot-bed; and when the Plants are come up, they muſt be tranſplanted into a freſh Hot-bed to bring them forward; and as the Heat of this Bed declines, there ſhould be a freſh one prepar'd; in which ſhould be plung'd Pots fill'd with light rich Earth, into which the Plants ſhould be plac'd; obſerving to water and ſhade them until they have taken Root: after which they ſhould have Air given to them, in proportion to the Heat of the Seaſon; and muſt be often water'd, being very thirſty Plants.

Thus they muſt be puſh'd on by Heat, in the manner directed for Amaranths; to which the Reader is deſir'd to turn for their farther Culture. In *July*, if the Seaſon be warm, they may be remov'd into the open Air, placing them in a warm Situation, where they will produce their Flowers plentifully; and if the Autumn be warm, their Seeds will ripen very well: but it will be a ſure Method to preſerve one Plant of each Kind under Glaſſes, leſt thoſe in the open Air ſhould not perfect their Seeds.

The ſeventh Sort has been, by ſeveral Writers on Botany, ſuppos'd to be only a Variety of the firſt; but whoever will conſider the whole Habit of the Plant, will find a ſpecific Difference in the Leaves and Flowers of theſe two Sorts.

The eighth Sort is a Native of *Malabar*, as alſo of ſeveral of the Eaſtern Countries. The Fruit of this Kind has no Thorns; but many Protuberances over the Surface. The Flowers are ſmall, and of a whitiſh-yellow Colour. The Seeds of this Sort are what the *Perſians*, and other Inhabitants where this Plant grows in plenty, make uſe of to intoxicate Perſons on whom they have Deſigns; and it is there call'd *Dutro*.

Theſe two Sorts are very tender; ſo require to be ſown upon an Hot-bed early in the Spring; and the Plants muſt afterward be treated in the ſame manner as hath been directed for the ſixth Sort: with which Management theſe may be brought to perfect their Seeds; which they never will do, if the Plants are expos'd to the open Air.

STRATIOTES, Water-ſoldier.

The *Characters* are;

It hath a compreſſed Spatha *compoſed of two Leaves, which is permanent: the Empalement of the Flower is of one Leaf, and is ſlightly cut into three Segments: the Flower has three heart-ſhap'd Petals, which ſpread open: in the Centre of the Flower is plac'd the* Ovarium, *ſupporting ſix Styles, attended by many* Stamina: *the Ovary afterward becomes a Capſule, opening in ſix Parts, in which are inclos'd many oblong flat Seeds.*

We know but one *Species* of this Genus; *viz.*

Stratiotes. *Lin. Flor.* Water-ſoldier; or, by ſome, Water-aloe, or Freſh water-ſoldier.

This Plant is in Shape like the Aloe; but the Leaves are thinner, and ſerrated on the Edges. It grows plentifully in Standing-waters in the *Iſle of Ely*, and many Places in the North of *England*; from whence young Plants may be procur'd in the Spring, when they firſt riſe on the Surface of the Water; and theſe, being plac'd in large Ponds or Canals, will ſtrike down their Roots, and propagate without any farther Care. In the Autumn the Plants ſink down to the Bottom of the Water, and riſe again in the Spring: about *Midſummer* they flower, and perfect their Seeds in *Auguſt*; which, falling into the Water, will take Root, and produce Plants the following Year.

STRAWBERRY. *Vide* Fragaria.

STRAWBERRY-TREE. *Vide* Arbutus.

STYRAX, The Storax-tree.

The *Characters* are;

The Flower conſiſts of one Leaf, ſhap'd like a Funnel, and cut into ſeveral Segments; out of whoſe Flower-cup riſes the Pointal, which is fix'd like a Nail in the Fore-part of the Flower: this afterward becomes a roundiſh fleſhy Fruit, including one or two Seeds in hard Shells.

We have but one *Species* of this Plant; *viz.*

STYRAX *folio mali cotonei. C.B.P.* Storax-tree with a Quince-tree-leaf.

This Plant grows plentifully in the Neighbourhood of *Rome*, and alſo in *Paleſtine*, and ſeveral of the Iſlands in the *Archipelago*, from whence the Fruit has been brought to *England*; where there have been many Plants raiſed of late Years, in ſome curious Gardens.

It may be propagated by ſowing the Seeds in Pots fill'd with freſh light Earth, and plung'd into a moderate Hot-bed. This ſhould be done as ſoon as poſſible, when the Seeds are procur'd; for if they are ſown the Latter-end of Summer, and the Pots kept in a moderate Hot-bed of Tanners Bark all the Winter, the Plants will come up the ſucceeding Spring; whereas thoſe ſown in the Spring often remain in the Ground a whole Year before the Plants come up.

When the Plants are up, they ſhould each be tranſplanted into a ſeparate ſmall Pot fill'd with freſh light Earth, and plung'd into a moderate Hot-bed; obſerving to water and ſhade them until they have taken Root: after which they ſhould be enur'd to the open Air by degrees, into which they muſt be remov'd in *June*, placing them in a warm Situation; in which Place they may remain till the Beginning of *October*; at which time they ſhould be remov'd into the Green-houſe, placing them where they may enjoy the Benefit of freſh Air when the Weather is mild: theſe Plants are tolerably hardy, and only require to be ſhelter'd from ſevere Froſt; for in *Italy* they grow extremely well in the open Air, and produce Fruit in great Plenty. Theſe Plants muſt be placed in a Green-houſe in Winter; for they are not hardy enough to live in the open Air in *England*. They caſt their Leaves in Autumn; ſo that in the Winter, when the Plants are not in a growing State, they ſhould have but little Water given to them: but as theſe Plants put out their Leaves pretty early in the Spring, they muſt then have a great Share of Air, otherwiſe they will draw up very weak.

The Reſin of this Tree is brought over for medicinal Uſe.

SUBER, The Cork tree.

The *Characters* are;

It is in all reſpects like the Ilex,

except in the Bark of the Tree, which in this is thick, ſpongy, and ſoft.

The *Species* are;

1. Suber *latifolium perpetuo virens. C. B. P.* The broad-leav'd ever-green Cork-tree.

2. Suber *anguſtifolium non ſerratum. C. B. P.* The narrow-leav'd Cork-tree, with ſmooth Edges.

There are ſeveral other Varieties of this Tree mentioned in ſome of the *Italian* Catalogues of Plants; but the two Sorts here mention'd are all I have obſerv'd in the *Engliſh* Gardens.

Theſe Trees may be propagated by ſowing their Acorns in the Spring, in the manner directed for the Ilex; to which theſe exactly agree, both in their Characters and Culture: therefore, to avoid Repetition, the Reader is deſir'd to turn to that Article for farther Inſtruction.

SUCCORY. *Vide* Cichorium.

SUMACH. *Vide* Rhus.

SURIANA.

The *Characters* are;

It hath a roſe-ſhap'd Flower compos'd of ſeveral Petals, which are plac'd orbicularly, from whoſe Empalement ariſes the Pointal, which afterward becomes the Fruit; which generally conſiſts of four Capſules, in which are included four roundiſh Seeds.

We know but of one *Species* of this Plant; *viz.*

Suriana *foliis portulacæ anguſtis. Plum. Nov. Gen.* Suriana with narrow Purſlain-leaves.

This Plant was ſo named by Father *Plumier*, who diſcover'd it in the *French* Settlements in *America*, in Honour to Dr. *Joſeph Surian* of *Marſeilles*, who was a very curious Botaniſt.

The Seeds of this Plant were brought from the *Havanna* by the late Dr. *William Houſtoun*, who found the Plants growing there in Plenty on the Shore, in moiſt Places, where the ſalt Water uſually flows. It alſo grows plentifully in ſome Parts of the Iſland of *Jamaica*.

It is propagated by Seeds, which muſt be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they muſt be carefully cleaned from Weeds, and frequently refreſhed with Water. In warm Weather the Glaſſes of the Hot-bed ſhould be raiſed every Day, to admit freſh Air to the Plants, to prevent their drawing up too weak. When the Plants are fit to remove, they ſhould be taken up carefully, and each planted in a ſeparate ſmall Pot filled with freſh light Earth, and plunged into an Hot-bed of Tanners Bark, obſerving to ſhade them until they have taken new Root; after which time they muſt be duly water'd every Evening in hot Weather; and they muſt have freſh Air admitted to them every Day, in proportion to the Warmth of the Seaſon. In this Hot-bed the Plants may remain till the Autumn, when the Nights begin to be cold; at which time they ſhould be remov'd into the Stove, and plung'd into the Bark-bed. During the Winter-ſeaſon theſe Plants muſt be kept warm, eſpecially while they are young, otherwiſe they will not live through the Winter in this Country. They muſt alſo be frequently refreſh'd with Water; but it muſt not be given to them in large Quantities in cold Weather; for too much Moiſture in Winter will ſoon deſtroy them. Theſe Plants make but ſlow Progreſs the firſt Year; afterward they will grow pretty freely, if they are not ſtunted. In Winter they muſt conſtantly be kept in the Stove in this Country, and if they are plung'd into the Bark bed, they will make the greater

Progreſs. In Summer they muſt have a large Share of Air, by opening the Glaſſes of the Stoves; and if their Leaves are cover'd with Filth (which the Plants in Stoves often contract), they ſhould be carefully waſhed with a Sponge; otherwiſe the Plants will not only appear unſightly, but it will retard their Growth.

Theſe Plants uſually grow about ſeven or eight Feet high; and as they retain their Leaves throughout the Year, they afford an agreeable Variety amongſt other Plants in the Stove.

SYCAMORE. *Vide* Acer majus.

SYMPHYTUM, Comfrey.

The *Characters* are;

The Flower conſiſts of one Leaf, ſhap'd like a Funnel, having an oblong Tube, but ſhap'd at the Top like a Pitcher: out of the Flower-cup (which is deeply cut into five long narrow Segments) riſes the Pointal, attended with four Embryoes, which afterward become ſo many Seeds, in form ſomewhat like the Head of a Viper, and ripen in the Flower-cup.

The *Species* are;

1. SYMPHYTUM *conſolida major fœmina, flore albo, vel pallide luteo. C. B. P.* The greater female Comfrey, with a white or pale-yellow Flower.

2. SYMPHYTUM *conſolida major mas, flore purpureo. C. B. P.* The greater male Comfrey, with a purple Flower.

3. SYMPHYTUM *majus, tuberoſa radice. C. B. P.* Greater Comfrey, with a tuberoſe Root.

4. SYMPHYTUM *minus, tuberoſa radice. C. B. P.* Smaller Comfrey, with a tuberoſe Root.

5. SYMPHYTUM *echii folio ampliore, radice rubra, flore luteo. Inſt. R. H.* Comfrey with a broad Vipers-bugloſs-leaf, a red Root, and a yellow Flower.

6. SYMPHYTUM *echii folio ampliore, radice rubra, flore exalbido. Inſt. R. H.* Comfrey with a broad Vipers-bugloſs-leaf, a red Root, and a whitiſh Flower.

7. SYMPHYTUM *echii folio anguſtiore, radice rubra, flore luteo. Inſt. R. H.* Comfrey with a narrow Vipers-bugloſs-leaf, a red Root, and a yellow Flower.

8. SYMPHYTUM *Creticum, echii folio anguſtiore, longiſſimis villis horrido, flore croceo. Tourn. Cor. Candy* Comfrey, with a narrow Vipers-bugloſs-leaf, cover'd with very long Hairs, and a ſaffron-colour'd Flower.

9. SYMPHYTUM *Orientale, echii folio ampliore, longiſſimis villis horrido, flore croceo. Tourn. Cor.* Eaſtern Comfrey, with a broad Vipers-bugloſs-leaf, cover'd with long Hairs, and a ſaffron-colour'd Flower.

10. SYMPHYTUM *Orientale, echii folio, flore albo tenuiſſimo. Tourn. Cor.* Eaſtern Comfrey, with a Vipers-bugloſs-leaf, and a very narrow white Flower.

11. SYMPHYTUM *Orientale, echii folio minore, flore nunc albo, nunc flaveſcente. Tourn. Cor.* Eaſtern Comfrey, with a ſmaller Vipers-bugloſs-leaf, and a Flower ſometimes white, and at other times of a yellowiſh Colour.

12. SYMPHYTUM *Orientale, oleæ folio argenteo, flore flaveſcente. Tourn. Cor.* Eaſtern Comfrey, with a ſilvery Olive-leaf, and a yellowiſh Flower.

13. SYMPHYTUM *Orientale anguſtifolium, flore cæruleo. Tourn. Cor.* Eaſtern Comfrey, with a narrow Leaf, and a blue Flower.

14. SYMPHYTUM *Conſtantinopolitanum, boraginis folio & facie, flore albo.*

albo. Tourn. Cor. Conſtantinople Comfrey, with a Leaf and Face of Borage, and a white Flower.

15. Symphytum *Orientale, folio ſubrotundo aſpero, flore cæruleo. Tourn. Cor.* Eaſtern Comfrey, with a rough roundiſh Leaf, and a blue Flower.

16. Symphytum *Orientale, folio ſubrotundo aſpero, flore cæruleo odoratiſſimo. Tourn. Cor.* Eaſtern Comfrey, with a rough roundiſh Leaf, and a very ſweet blue Flower.

The firſt Sort grows wild upon the Sides of Banks and Rivers in divers Parts of *England*, where it is commonly gather'd to ſupply the Markets for medicinal Uſe. The ſecond Sort is ſometimes found wild in *England*; but is leſs common than the former. In *Holland* it is the only Sort I obſerv'd wild; where it grows on the Sides of the Canals almoſt every-where.

The third Sort I never yet obſerved growing wild; but it is preſerv'd in many Gardens for Variety.

The fourth Sort here mentioned is pretty common in ſeveral *Engliſh* Gardens, where it is preſerv'd for the ſake of Variety. This increaſes pretty faſt by its Roots; but is ſeldom propagated by Seeds. The fifth, ſixth, and ſeventh Sorts grow wild in *Spain* and *Portugal*, from whence their Seeds may be obtain'd. Theſe have red Roots, ſomewhat reſembling thoſe of the Alkanet; and are by ſome Botaniſts ranged amongſt the Alkanets.

The other Sorts were diſcover'd by Dr. *Tournefort* in the *Levant*, from whence he ſent their Seeds to the Royal Garden at *Paris*.

All theſe Plants may be cultivated, either by ſowing their Seeds in the Spring, or by parting of their Roots: the latter Way, being the moſt expeditious, is chiefly practis'd, where they are planted for Uſe. The beſt Seaſon for parting their Roots is in Autumn; at which time almoſt every Piece of a Root will grow. They ſhould be planted about eighteen Inches aſunder, that they may have room to ſpread, and will require no farther Care but to keep them clear from Weeds; for they are extreme hardy, and will grow upon almoſt any Soil, or in any Situation.

SYRINGA, The Mock-orange, *vulgo.*

The *Characters* are;

The Flower, for the moſt part, conſiſts of five Leaves, which are plac'd circularly, and expand in form of a Roſe; from whoſe Flower-cup riſes the Pointal, which afterward becomes a roundiſh Fruit adhering to the Flower-cup, divided into four Cells, which are full of ſmall Seeds.

The *Species* are;

1. Syringa *alba, ſive Philadelphus Athenæi. C. B. P.* The common white Syringa, or Mock-orange.

2. Syringa *flore albo pleno. C. B. P.* The double white Syringa.

3. Syringa *flore albo ſimplici, foliis ex luteo variegatis.* The ſtriped-leav'd Syringa.

Dr. *Linnæus* has chang'd the Title of this Genus to *Philadelphus*; and he has given this Title of *Syringa* to the *Lilac*; but as the old Titles of both *Genera* are more commonly known, I ſhall chooſe to continue them to the Plants they have been apply'd to by former Botaniſts.

The firſt Sort is that which is commonly cultivated in the *Engliſh* Gardens. The ſecond ſeldom produces its Flowers, which are very double; and the Plants are of humble Growth.

The variegated Sort is preſerv'd in the Gardens of ſuch as are curious in ſtriped Plants, though there is no great Beauty in it: becauſe when the Plants are vigorous, the Stripes in the Leaves ſcarcely appear.

All theſe Plants may be eaſily propagated, by taking off their Suckers in Autumn (which they produce very plentifully), and planting them out in a Nurſery at three Feet Diſtance Row from Row, and a Foot aſunder in the Rows; obſerving to keep the Ground between them conſtantly clear from Weeds, as alſo to dig it up every Spring to looſen it, that the Roots of the Plant may more readily extend themſelves. In this Nurſery they may remain two Years, by which time they will be fit to tranſplant out where they are to remain; which may be into ſmall Wilderneſs-quarters, or amongſt flowering Shrubs in Clumps, obſerving to place them with other Sorts of Shrubs of the ſame Growth; for theſe ſeldom grow above ſix or ſeven Feet high in *England*, and the double Sort not more than three or four.

They are extreme hardy, ſo may be planted in almoſt any Soil or Situation; and will require no farther Culture but to take off the Suckers every Year, and cut out the dead Wood; as alſo to keep them clear from Weeds in Summer, and dig the Ground about their Roots every Winter, which will make them thrive and flower very plentifully. The Seaſon of their flowering is in *May*, and in cool Seaſons they continue in Beauty the firſt Part of *June*. Their Flowers have a Scent ſomewhat like thoſe of the Orange-tree, from whence it had the Name of Mock-orange: but if theſe are plac'd in a cloſe Room, or are ſmelt to too cloſely, they have a ſtrong diſagreeable Scent, and too powerful for the Ladies; but when they are in the open Air, the Scent is not ſo affecting.

T A.

TABERNÆMONTANA.

The *Characters* are;

It hath a tubulous Flower, conſiſting of one Leaf, which is ſpread open toward the Top, and divided into ſeveral Parts: from the Bottom of the Flower ariſes the Pointal, which afterward becomes the Fruit, compoſed of two Capſules which open lengthways; and are fill'd with oblong Seeds, ſurrounded with a thin Pulp.

The *Species* are;

1. TABERNÆMONTANA *lacteſcens, citrii foliis undulatis. Plum. Nov. Gen.* Milky Tabernæmontana, with a waved Citron-leaf.

2 TABERNÆMONTANA *lacteſcens, lauri folio, flore albo, ſiliquis rotundioribus. Houſt.* Milky Tabernæmontana, with a Bay-leaf, a white Flower, and rounder Pods.

The firſt of theſe Sorts is common in the Iſland of *Jamaica*, and in ſeveral other Places in the warm Parts of *America*; where it riſes to the Height of fifteen or ſixteen Feet, having a ſmooth ſtrait Trunk, covered with a whitiſh Bark; at the Top of the Trunk come out the Branches, which are irregular, and beſet with ſhining-green Leaves; from the Foot-ſtalks of theſe Leaves are produc'd the Flowers, which are yellow, and extremely ſweet ſcented: theſe Flowers are ſucceeded by two forked Pods, in which the Seeds are contained. This Genus of Plants is very near of kin to the Nerium or Oleander; and has been by ſome Botanical Writers ranged under that Head; but the Seeds of this Genus having no Down adhering to them, as have thoſe of the Oleander, and being included in a ſoft pulpy Subſtance, Father *Plumier* has conſtituted this Genus, in Honour to Dr. *James Theodore*, who was called *Tabernæmontanus*, from a little Village in *Germany*, where he was born. He was one of the moſt knowing Botaniſts of his Age, and publiſhed at *Francfort* a Folio, in a long Form, in the Year 1590. in which are the Figures of two thouſand two hundred and fifty Plants.

The ſecond Sort was diſcovered at *La Vera Cruz*, by the late Dr. *William Houſtoun*, who ſent the Seeds into *England*, from whence ſeveral of the Plants have been raiſed.

Both theſe Plants are very impatient of Cold; ſo will not live in this Country, unleſs they are placed in a warm Stove; they may be propagated by Seeds, which ſhould be ſown early in the Spring, on an Hot-bed; and when the Plants are come up, they muſt be carefully tranſplanted into ſmall Pots filled with light rich Earth, and then plunged into an Hot-bed of Tanners Bark; being careful to ſhade them in the Heat of the Day, until they have taken new Root; after which time they muſt have free Air admitted to them every Day when the Weather is warm; but if the Nights ſhould prove cold, the Glaſſes of the Hot-bed ſhould be covered with Mats every Evening, ſoon after the Sun goes off from the Bed. Theſe Plants muſt be often refreſhed with Water; but it muſt not be given to them in large Quantities, eſpecially while they are young: for as they are full of a milky Juice, they are very ſubject to rot with much Moiſture.

The Plants may remain during the Summer-ſeaſon in the Hot-bed, provided the Tan is ſtirred up to renew the Heat when it wants, and a little new Tan added; but at *Michaelmas*, when the Nights begin to be cold, the Plants ſhould be remov'd, and plung'd into the Bark-bed in the Stove; where, during the Winter-ſeaſon, they muſt be kept in a moderate Degree of Warmth; and in cold Weather they ſhould have but little Water given them, leſt it ſhould rot them. As theſe Plants are too tender to live in the open Air in this Country, they ſhould conſtantly remain in the Stove, where, in warm Weather, they may have free Air admitted to them, by opening the Glaſſes of the Stove; but in cold Weather they muſt be kept warm; with this Management the Plants will thrive, and produce their Flowers; and as they are always green, they will make a pleaſant Diverſity amongſt other tender Exotic Plants in the Stove.

Theſe Plants may alſo be propagated by Cuttings, during the Summer-ſeaſon; which ſhould be cut off from the old Plants, and laid to dry in the Stove five or ſix Days before they are planted, that the wounded Parts may heal, otherwiſe they will rot. Theſe Cuttings ſhould be planted in Pots fill'd with freſh light Earth, and plunged into the Hot-bed of Tanners Bark, obſerving to ſhade them from the Sun in the Middle of the Day in hot Weather, as alſo to refreſh them now-and-then with a little Water. When the Cuttings have taken Root, they may be tranſplanted into ſeparate Pots, and treated in the ſame manner as thoſe which are raiſed from Seeds.

TACAMAHACA *foliis crenatis, ſadelbout ſeu lignum ad ephippia conficienda aptum. Par. Bat. prod. Pluk. Phyt. tab.* 228. *f.* 2. The Tacamahaca.

This Tree grows ſpontaneouſly on the Continent of *America*, where the Inhabitants wound the Bodies of the Trees in the Spring, from whence there flows a Balſam, which is greatly eſteemed by the Phyſicians of thoſe Countries, and is placed amongſt the Liſt of Simples in the College Diſpenſary, though at preſent it is not much uſed in *England*.

Some of the Plants of this Sort were brought from *Canada* into *France* a few Years ſince, from whence they were procured by ſome curious Perſons in the Iſland of *Jerſey*, where it is propagated in the Gardens; and was ſent to *England* by the Name of *Arbre de la Reine*, as a Preſent to the late Queen.

This Tree is hardy enough to reſiſt the Cold of our Winters in the open Air; and if it is planted in a ſhelter'd Situation, will not be in any Danger of ſuffering from the ſevereſt Cold of this Country, eſpecially when the Plants have obtained Strength; ſo it is very proper to plant amongſt hardy Exotic Trees and Shrubs in Wilderneſs-quarters, where they will add to the Variety. The Shoots of this Tree are very like thoſe of the black Poplar, as are alſo the Leaves; and the Buds, in the Spring, before the Leaves come out, are cover'd with a dark glutinous Balſam, which ſmells very ſtrong when touched, and adheres to the Fingers. The Leaves of this Tree fall off at *Michaelmas*, and new Leaves come out the Latter-end of *February*, or the Beginning of *March*; for it is one of the earlieſt Trees in coming out in the Spring.

There are ſome of the Plants now in the Phyſic-garden at *Chelſea*, which have produced their Male Flowers (or Katkins), which are very like thoſe of the Walnut-tree, or of ſome of the Poplars; ſo that, it is probable, this may be of the latter Genus: but as we have no Account of the Fruit, nor hath any of the Trees in the *Engliſh* Gardens, as yet, attempted to produce any, we cannot determine its true Genus.

It may be very eaſily propagated by Cuttings, which ſhould be planted in *October*, ſoon after the Leaves drop, in a Bed of freſh Earth, in any Expoſure, where almoſt every Cutting will ſucceed. They may alſo be planted in the Spring; but at this Seaſon they are not ſo ſure to take Root, as in the Autumn; for as the Plant is very early in coming out, ſo, unleſs the Cuttings are taken off ſome time before, they either will not grow, or, if they ſhould take Root, they would not make much Progreſs the firſt Year. The Plants are alſo very apt to put out Suckers from their Roots, ſo that they may be increaſed in Plenty; for the Shoots which have been accidentally buried in the Ground, have ſhotten up the following Spring, and made good Plants.

This ſeems not to be a Tree of great Size, if we may judge by thoſe in the *Engliſh* Gardens, which do not grow more than fourteen or ſixteen Feet high; but they put out lateral Branches from the Ground upward, and do not make large Stems.

TAGETES, *African* or *French* Marigold.

The *Characters* are;

The Flower is radiated, conſiſting of divers Florets, which are plain, and cut into ſeveral Segments; but the Diſk of the Flower conſiſts of Half-florets, which ſtand upon the Embryoes: the Flower-cup conſiſts of one Leaf, is tubulous, and incloſes the Embryoes; which afterward become angular Seeds, with a Leaf upon the Head of each.

The *Species* are;

1. TAGETES *maximus rectus, flore ſimplici, ex luteo pallido. J. B.* Great-

eſt upright *African* Marigold, with a ſingle pale-yellow Flower.

2. TAGETES *maximus rectus, flore maximo multiplicato. J. B.* Greateſt upright *African* Marigold, with a large double Flower.

3. TAGETES *maximus rectus, flore maximo multiplicato aurantii coloris.* Greateſt upright *African* Marigold, with a very large double orange-colour'd Flower.

4. TAGETES *maximus rectus, flore maximo multiplicato ſulphurei coloris.* Greateſt upright *African* Marigold, with a very large double brimſtone-colour'd Flower.

5. TAGETES *maximus rectus, flore maximo multiplicato, pallide luteo odorato.* Greateſt upright *African* Marigold, with a very large double Flower of a pale-yellow Colour, and a ſweet Scent.

6. TAGETES *maximus rectus, flore maximo multiplicato, pallide luteo, & fiſtuloſo.* Greateſt upright *African* Marigold, with a large double pale-yellow and piped Flower, commonly called the quilled *African*.

7. TAGETES *Indicus medius, flore ſimplici luteo pallido. J. B.* *Indian* middle *French* Marigold, with a ſingle pale-yellow Flower.

8. TAGETES *Indicus medius, flore luteo multiplicato. H. L.* The middle *French* Marigold, with a double Flower.

9. TAGETES *Indicus minor, ſimplici flore, ſive Caryophyllus Indicus, ſive Flos Africanus. J. B.* Leſſer or common *French* Marigold, with a ſingle Flower, call'd *Indian* Clove-gilliflower.

10. TAGETES *Indicus minor, multiplicato flore. J. B.* Double *French* Marigold, *vulgo*.

11. TAGETES *Indicus, flore ſimplici fiſtuloſo. H. L.* Single *French* Marigold, with a piped Flower.

12. TAGETES *Indicus, flore fiſtuloſo duplicato. H. L.* Double *French* Marigold, with a piped Flower.

13. TAGETES *Indicus minimus, flore ſericea hirſutie obſito. H. L.* The leaſt *French* Marigold, with a ſoft hairy Flower.

All theſe Plants are annual; ſo muſt be propagated from Seeds every Spring, which may be ſown upon a moderate Hot-bed in *March*; and when the Plants are come up, they ſhould have Plenty of freſh Air; for if they are drawn too much, they will not afterward become handſome, notwithſtanding they have all poſſible Care taken of them When they are about three Inches high, they ſhould be tranſplanted on a very moderate Hot-bed, which may be arched over with Hoops, and cover'd with Mats; for theſe Plants are hardy enough to be brought up without Glaſſes: in this Bed they ſhould be planted about ſix Inches aſunder each Way, obſerving to water and ſhade them until they have taken Root; but as the Plants acquire Strength, they ſhould be enur'd to bear the open Air by degrees; and about the Beginning of *May* they ſhould be taken up, with a Ball of Earth to the Root of each Plant, and plac'd in a Nurſery in a warm Situation, about eighteen Inches aſunder, obſerving to water and ſhade them until they have taken Root; and in very dry Weather the Waterings ſhould be repeated: in this Nurſery they may remain until their Flowers appear, ſo as to diſtinguiſh thoſe with double Flowers; which may be taken up with a Ball of Earth to each Plant, and planted into the Borders of the Parterre-garden, or into Pots, for furniſhing the Courts, &c. where the ſeveral Varieties, being intermix'd with other annual Plants, afford an agreeable Variety.

Thoſe with ſingle Flowers ſhould be pull'd up, and thrown away as good for little, becauſe the Seeds produced from them will rarely produce double Flowers: therefore great Care ſhould be taken to ſave only the Seeds of thoſe whoſe Flowers are very double of every Kind; from which there will always be a good Quantity of double ones produc'd; tho' from the very beſt Seeds there will always be ſome ſingle Flowers; but the ſmall Sorts always produce a greater Number of double Flowers than the large, which are more apt to degenerate.

Theſe Plants have a ſtrong diſagreeable Scent, eſpecially when handled; for which Reaſon they are not ſo greatly eſteemed for planting near Habitations: but the Flowers of the ſweet-ſcented Sort, being more agreeable, are moſtly coveted to plant in ſmall Gardens. All theſe Sorts begin to flower in *June*, and continue all the latter Part of the Year, until the Froſt prevents their flowering: for which, together with the little Trouble requir'd in their Culture, they have greatly obtained in moſt *Engliſh* Gardens.

TAMARINDUS, The Tamarind-tree.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are ſo plac'd as to reſemble a papilionaceous one in ſome meaſure; but theſe expand circularly, from whoſe many-leav'd Flower-cup riſes the Pointal; which afterward becomes a flat Pod, containing many flat angular Seeds, ſurrounded with an acid blackiſh Pulp.

We have but one *Species* of this Tree; *viz.*

Tamarindus. *Raii Hiſt.* The Tamarind-tree.

There are ſome who imagine the Tamarind-tree of the *Eaſt-Indies*, and that of the *Weſt-Indies*, to be different; but I don't remember to have ſeen them diſtinguiſh'd by any Botanic Author: tho' indeed, from the different Appearance of the Pods, they ſeem very different; for the Pods which I have ſeen of the *Eaſt-Indian* Sort were very long, and contain'd ſix or ſeven Seeds in each; whereas thoſe of the *Weſt-Indies* rarely contain more than three or four: but from the Plants which I have rais'd from both Sorts of Seeds, I can't diſtinguiſh them aſunder as yet.

Theſe Trees grow to a great Magnitude in their native Countries; but in *Europe* they are preſerved as Curioſities by thoſe who are Lovers of rare Plants.

They are eaſily propagated by ſowing their Seeds on an Hot-bed in the Spring; and when the Plants are come up, they ſhould be planted each into a ſeparate ſmall Pot fill'd with light rich Earth, and plunged into an Hot-bed of Tanners Bark, to bring them forward, obſerving to water and ſhade them until they have taken Root; and as the Earth in the Pots appears dry, they muſt be watered from time to time; and ſhould have Air given to them in proportion to the Warmth of the Seaſon, and the Bed in which they are placed: when the Pots in which they are planted are fill'd with their Roots, the Plants ſhould be ſhifted into Pots of a larger Size, which muſt be fill'd up with rich light Earth, and again plunged into the Hot-bed, giving them Air, as before, according to the Warmth of the Seaſon: but in very hot Weather the Glaſſes ſhould be ſhaded with Mats in the Heat of the Day, otherwiſe the Sun will be too violent for them through the Glaſſes; nor will the Plants thrive, if they are expos'd to the open Air, even in the warmeſt Seaſon; ſo that they muſt be conſtantly kept in the Bark-ſtove both Winter and Summer, treating them as hath been directed for the Coffee-tree, with whoſe Culture they will thrive exceedingly.

Theſe Plants, if rightly managed, will grow very faſt; for I have had them upward of three Feet high in one Summer from Seed, and had one Plant which produced Flowers the ſame Seaſon it was ſown: but this was accidental; for I have never ſince had any of them flower, altho' I have ſeveral Plants of different Ages; one of which is ten Years old, and about eleven Feet high, with a large ſpreading Head.

TAMARISCUS, The Tamariſk-tree.

The *Characters* are;

The Flowers are roſaceous, conſiſting of ſeveral Leaves, which are placed orbicularly; from whoſe Flower-cup riſes the Pointal, which afterward becomes a Pod (ſomewhat like thoſe of the Sallow), which opens into two Parts, and contains ſeveral downy Seeds.

The *Species* are;

1. TAMARISCUS *Narbonenſis. Lob. Icon.* The *French* or narrow-leav'd Tamariſk-tree.

2. TAMARISCUS *Germanica. Lob. Icon.* The *German* Tamariſk.

Theſe Trees are preſerv'd in the Gardens of thoſe who are curious in collecting the various Kinds of Trees and Shrubs; but they have not much Beauty to recommend them; for their Branches are produc'd in ſo ſtraggling a manner, as not, by any Art, to be train'd up regularly: and their Leaves are commonly thin upon the Branches, and fall away in Winter; ſo that there is nothing to recommend them but their Oddneſs.

They may be eaſily propagated, by laying down their tender Shoots in the Spring, or by planting Cuttings in an Eaſt Border in moiſt Weather; which, if ſupplied with Water, will take Root in a ſhort time; but they ſhould not be removed until the following Spring; at which time they may be either placed in a Nurſery, to be trained up two or three Years, or elſe into the Quarters where they are deſign'd to remain; after which, the only Culture they will require, is, to prune off the ſtraggling Shoots, and keep the Ground clean about them.

Theſe Plants delight in a ſandy Soil, not over-rich; and ſhould be plac'd amongſt Shrubs of a middling Growth; for they rarely grow above fifteen or ſixteen Feet high in *England*; but are very hardy as to Cold.

TAMNUS, The Black Bryony.

The *Characters* are;

It is Male and Female in different Plants: the Flowers of the Male Plant conſiſt of one Leaf, and are bell-ſhaped; but theſe are barren: the Embryoes are produced on the Female Plants, which afterward become an oval Berry, including roundiſh Seeds: to theſe Notes ſhould be added, That theſe Plants have no Claſpers, as the White Bryony hath.

The *Species* are;

1. TAMNUS *racemoſa, flore minore luteo palleſcente. Tourn.* The common Black Bryony.

2. TAMNUS *Cretica, trifido folio. Tourn. Cor.* Black Bryony of *Crete*, with a trifid Leaf.

3. TAMNUS *Americana tubifera, radice fungiformi. Plum. American* Black Bryony, with a Root reſembling Muſhroom.

4. TAMNUS *Americana racemoſa minor. Plum.* Smaller branching *American* Black Bryony.

5. Tamnus *Americana racemoſa major. Plum.* Greater branching *American* Black Briony.

6. Tamnus *Americana, amplis foliis, ſubtus purpureis. Plum. American* Black Bryony, with large Leaves, which are purple on their Underſide.

7. Tamnus *Americana, anguriæ folio. Plum. American* Black Bryony, with a Water-melon-leaf.

The firſt Sort is rarely cultivated in Gardens; but grows wild under the Sides of Hedges in divers Parts of *England*; and is there gather'd for medicinal Uſe. It may be eaſily propagated, by ſowing the Seeds ſoon after they are ripe, under the Shelter of Buſhes, where, in the Spring, the Plants will come up, and ſpread their Branches over the Buſhes, and ſupport themſelves, requiring no farther Care; and their Roots will abide many Years in the Ground, without decaying.

The ſecond Sort was diſcovered in the Iſland of *Crete*, by Dr. *Tournefort*, who ſent their Seeds to the Royal Garden at *Paris*: this is an abiding Plant, which is hardy enough to live in the full Ground in *England*.

The other Sorts were diſcovered in *America* by Father *Plumier*: moſt of theſe grow wild in the uncultivated Parts of *Jamaica*, and the other Iſlands in the *Weſt-Indies*: theſe Plants are preſerved in ſome Botanic Gardens, for the ſake of Variety; but as they have but little Beauty, they are ſeldom admitted into other Gardens; for they will not live thro' the Winter in *England*, unleſs they are preſerved in a Stove.

TANACETUM, Tanſy.

The *Characters* are;

It hath a floſculous Flower, conſiſting of many Florets, divided into ſeveral Segments, ſitting on the Embryo, and contained in a ſquamous and hemiſpherical Empalement: the Embryo afterward becomes a Seed, not at all downy: to theſe Notes muſt be added, Thick Flowers gathered into a kind of Head.

The *Species* are;

1. Tanacetum *vulgare luteum. C. B. P.* Common Tanſy.

2. Tanacetum *foliis criſpis. C. B. P.* Curl'd or double Tanſy.

3. Tanacetum *vulgare, foliis variegatis.* Common Tanſy, with ſtriped Leaves.

4. Tanacetum *vulgare luteum maximum. Boerh. Ind.* The largeſt common Tanſy.

5. Tanacetum *Africanum arboreſcens, foliis lavendulæ, multifido folio. H. Am. African* ſhrubby Tanſy, with Leaves like the multifid Lavender.

6. Tanacetum *Orientale minus. Tourn. Cor.* Smaller Eaſtern Tanſy.

7. Tanacetum *Davaricum humilius, foliis tenuiter diſſectis. Amman.* Tanſy of *Davaria*, with finecut Leaves.

8. Tanacetum *Africanum fruteſcens multiflorum, foliis tanaceti vulgaris decuplo minoribus. Boerh. Ind.* Shrubby *African* Tanſy, with many Flowers, and Leaves like the common Sort, but ten times leſs.

The firſt and ſecond Sorts are very common in *England*, being promiſcuouſly cultivated in Gardens, for the Uſe of the Kitchen; but it is the firſt which ſhould be propagated for medicinal Uſe. The third Sort is a Variety of the firſt, which is by ſome preſerv'd for the ſake of its variegated Leaves.

The fourth Sort is very like the common in Appearance; but is much larger, and has leſs Scent.

All theſe Sorts are eaſily propagated by their creeping Roots, which, if permitted to remain undiſturb'd, will in a ſhort time overſpread the Ground where they are planted; ſo that the Slips ſhould be plac'd at leaſt a Foot aſunder, and in particular Beds, where the Paths round them may be often dug, to keep their Roots within Bounds. They may be tranſplanted either in Spring or Autumn, and will thrive in almoſt any Soil or Situation.

The common Tanſy is greatly uſed in the Kitchen early in the Spring; at which Seaſon, that which is in the open Ground, or eſpecially in a cold Situation, is hardly forward enough to cut; ſo that where this is much wanted at that Seaſon, it is the beſt way to make a gentle Hot-bed in *December*, and plant the old Roots thereon, without parting them; and arch the Bed over with Hoops, to cover it with Mats in cold Weather; by which Method the Tanſy will come up in *January*, and be fit to cut in a ſhort time after.

The fifth and eighth Sorts were brought from the *Cape of Good Hope*, and are preſerv'd in the Gardens of thoſe who are curious in collecting Exotic Plants. Theſe may be propagated by planting Cuttings or Slips, during any of the Summer-months, upon a Bed of light rich Earth, obſerving to water and ſhade them until they have taken Root; after which they may be taken up, and planted in Pots fill'd with freſh light Earth, placing them in a ſhady Situation until they have taken new Root; and then they may be expoſed in an open Place, amongſt other Exotic Plants, until the Beginning of *October*; when they muſt be remov'd into the Green-houſe, obſerving to place them in the cooleſt Part thereof, and as near the Windows as poſſible, that they may enjoy the free Air in mild Weather; otherwiſe they will draw up weak, and be liable to grow mouldy, and decay.

They muſt alſo be frequently water'd; but in very cold Weather they muſt not have too much Water given them at each time; though in Summer they ſhould have it in plenty. With this Management (together with obſerving to ſhift them into larger Pots, as they ſhall require it), the Plants will grow large, and produce a great Quantity of Flowers; which commonly appear early in the Spring, and thereby greatly add to the Variety of the Green-houſe.

The ſixth Sort was diſcover'd by Dr. *Tournefort* in the *Levant*; from whence he ſent the Seeds to the Royal Garden at *Paris*. The ſeventh Sort was ſent to me from *Peterſburgh*, by Dr. *Amman*, who was Profeſſor of Botany in that Univerſity. Both theſe, being very hardy Plants, may be propagated by Seeds, or parting of their Roots, in the ſame manner as is practis'd for the common Sort; but the Roots of theſe Kinds do not creep ſo much as thoſe of the common Sort.

TAN, or TANNERS BARK, is the Bark of the Oak tree, chopp'd or ground into coarſe Powder, to be us'd in Tanning or Dreſſing of Skins; after which it is of great Uſe in Gardening: Firſt, by its Fermentation (when laid in a Body), which is always moderate, and of a long Duration, which renders it of great Service for Hot-beds: and, ſecondly, after it is well rotted, it becomes excellent Manure for all Sorts of cold ſtiff Land; upon which one Load of Tan is better than two of rotten Dung, and will continue longer in the Ground.

TAPIA, The Garlick Pear-tree.

The *Characters* are;

It hath an anomalous Flower, conſiſting of four Petals or Leaves, which ſtand erect; the lower Part being occupied by a Number of Chives: the Pointal, which is fix'd on a long Footſtalk, riſes from the Centre of the Empalement, and afterward becomes a globular fleſhy Fruit; in the Centre of which are included many Seeds, which are ſhaped almoſt like Kidneys.

We have but one *Species* of this Plant; *viz.*

Tapia *arborea triphylla. Plum. Nov. Gen.* The Garlick Pear-tree, *vulgo.*

The Name *Tapia* is what the *Americans* call this Tree; ſo Father *Plumier* has conſtituted it as a new Genus, by the ſame Name The *Engliſh* Inhabitants of *America* call it Garlick-pear, from the Fruit having a very ſtrong Scent of Garlick.

This Tree is pretty common in *Jamaica*, and ſeveral other Places in the warmer Parts of *America*, where it uſually riſes to the Height of thirty or forty Feet, and ſpreads into many Branches. During the dry Seaſons, theſe Trees are uſually deſtitute of Leaves; but when the Rains begin, they thruſt out their Flowers at the Extremity of their Branches; and ſoon after their Leaves come out, which are of a dark-green Colour; and are always three together on the ſame Footſtalk. When the Flowers fall off, the Pointal becomes a round Fruit, about the Size of a Tennis-ball; which, when ripe, has a rough browniſh Rind, and a mealy ſweetiſh Pulp, ſomewhat like ſome of the *European* Pears; but has a ſtrong Scent of Garlick. This Fruit is often eaten by the Inhabitants of *America*, by way of Deſſert; tho' they are not very tempting. The Swine, which are ſometimes fattened with this Fruit, have the ſtrong Scent of Garlick communicated to their Fleſh. Theſe Trees generally grow on low moiſt Land in ſeveral Parts of *America*.

In *Europe* this Tree is preſerv'd by ſome curious Perſons, who cultivate tender Exotic Plants. It is propagated by Seeds, which ſhould be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be each tranſplanted into a ſeparate ſmall Pot fill'd with rich Earth, and then plunged into a moderate Hot-bed of Tanners Bark; obſerving to ſhade them from the Sun every Day, until they have taken new Root; after which time they muſt be treated in the ſame manner as hath been directed for the Guanabanus; with which Management, this Plant will thrive, and make a Variety in the Stove, amongſt other tender Exotic Plants.

TARCHONANTHUS.

The *Characters* are;

It hath a compound Flower, compoſed of ſeveral Florets, which are Hermaphrodite; and Half-florets, which are Female: the Florets are tubulous, and of one Leaf, cut into five Parts at their Brim: the Half-florets ſurround the other, and compoſe the Rays: theſe are included in one common ſimple Empalement: the Hermaphrodite Flowers are barren; but the Female Flowers are ſucceeded by a ſingle compreſs'd Seed.

We have but one *Species* of this Genus in the *Engliſh* Gardens at preſent; *viz.*

Tarchonanthus *ſalicis capreæ foliis odoratis. Vaill. Mem.* 1719. Tarchonanthus with ſallow ſweet-ſmelling Leaves: this is commonly known by the Title of *African* Tree Fleabane, with a Sage-leaf ſmelling like Roſmary.

This Plant will grow to the Height of twelve or fourteen Feet, with a ſtrong woody Stem, and may be train'd to have a regular Head. The Branches are garniſh'd with Leaves, which are in Shape like thoſe of the broad-leav'd Sallow; having a downy Surface, like thoſe of Sage, and their Under-ſides are white: theſe reſemble in Smell the Roſmary-leaves when bruiſ'd. The Flowers are produc'd in Spikes at the Extremity of the Shoots, which are of a dull-purple Colour; ſo do not make any great Appearance; but as the Leaves remain all the Year, theſe Plants are preſerv'd to make a Variety in the Green-houſe, during the Winter-ſeaſon, by thoſe who are curious in collecting of foreign Plants.

This Plant is a Native of *Africa*; ſo is too tender to live through the Winter in the open Air in *England*; but it requires no artificial Heat; therefore may be plac'd in a common Green-houſe with Myrtles, Oleanders, and other hardy Exotic Plants, in Winter; and in the Summer may be expoſ'd with them in the open Air, and treated in the ſame manner as they are.

It may be propagated by Cuttings, which ſhould be planted in *May*, in Pots fill'd with light Earth; and if they are plung'd into a moderate Hot-bed, it will promote their putting out Roots. Theſe ſhould be ſhaded with Mats, or cover'd with oiled Paper, to ſcreen them from the Sun until they are rooted; and they muſt be duly water'd. By *Auguſt* theſe Cuttings will have taken Root, when they ſhould be each tranſplanted into a ſeparate Pot, and plac'd in the Shade until they have taken new Root; after which time they may be plac'd with other hardy Exotic Plants in a ſhelter'd Situation, where they may remain till the Middle or End of *October*, when they ſhould be remov'd into the Green-houſe, placing them where they may have a large Share of Air in mild Weather. This Plant is very thirſty, ſo muſt be often water'd; and every Year the Plants muſt be ſhifted, and, as they increaſe in Size, ſhould be put into larger Pots.

TARRAGON. *Vide* Abrotanum.

TAXUS, The Yew-tree.

The *Characters* are;

It hath amentaceous Flowers, which conſiſt of many Apices, *for the moſt part ſhaped like a Muſhroom, and are barren; but the Embryoes (which are produc'd at remote Diſtances on the ſame Tree) do afterward becomes hollow: it hath bell-ſhaped Berries, which are full of Juice, and include Seeds ſomewhat like Acorns, having, as it were, a little Cup to each.*

The *Species* are;

1. Taxus. *J. B.* The common Yew-tree.

2. Taxus *folio latiori, magiſque ſplendente. Boerh. Ind.* Yew-tree with a broader and more ſhining Leaf.

3. Taxus *foliis variegatis. H. R. Par.* The Yew-tree with ſtriped Leaves.

The two firſt Sorts are often promiſcuouſly cultivated in Gardens, without Diſtinction; but the third is preſerv'd by ſome for the ſake of its variegated Leaves, tho' there is very little Beauty in them; for during the Summer-ſeaſon, when the Plants are in Vigour, the Stripes in the Leaves are hardly to be perceiv'd; but in Winter they are more obvious: however, the Stripe being rather a Blemiſh, than any real Beauty, it is hardly worth preſerving.

There is hardly any Sort of ever-green Tree, which has been ſo generally cultivated in the *Engliſh* Gardens, upon the account of its being ſo tonſile, as to be with Eaſe reduc'd into any Shape the Owner pleas'd; and it may be too often ſeen, eſpecially in old Gardens, what a wretched Taſte of Gardening did generally prevail, from the monſtrous Figures of Beaſts, *&c.* we find theſe Trees reduc'd into: but of late this Taſte has been juſtly exploded by many Perſons of ſuperior Judgment: for what could be more abſurd than the former Methods of planting Gardens? where, in the Part next the Habitations, were crouded a large Quantity of theſe and other Sorts of ever-green Trees, all of which were ſheer'd into ſome trite Figure or other; which, beſide the obſtructing the Proſpect from the Houſe, occaſion'd an annual Expence, to render the Trees diſagreeable. For there never was a Perſon, who had conſider'd the Beauty of a Tree in its natural Growth, with all its Branches diffus'd on every Side, but muſt acknowlege ſuch a Tree infinitely more beautiful than any of thoſe ſhorn Figures, ſo much ſtudied by Perſons of a groveling Imagination.

The only Uſe I would recommend this Tree for in Gardens, is to form Hedges for the Defence of Exotic Plants; for which Purpoſe it is the moſt proper of any Tree in Being: the Leaves being ſmall, the Branches are produc'd very cloſely together; and if carefully ſhorn, they may be render'd ſo cloſe, as to break the Winds better than any other Sort of Fence whatever; becauſe they will not be reverberated, as againſt Walls, Pales, and other cloſe Fences; and conſequently are much to be preferr'd for ſuch Purpoſes.

Theſe Trees may be eaſily propagated by ſowing their Berries in Autumn, as ſoon as they are ripe (without clearing them from the Pulp which ſurrounds them, as hath been frequently directed), upon a Bed of freſh undung'd Soil, covering them over about half an Inch thick with the ſame Earth.

In the Spring the Bed muſt be carefully clear'd from Weeds; and if the Seaſon prove dry, it will be proper to refreſh the Bed with Water now-and-then, which will promote the Growth of the Seeds; many of which will come up the ſame Spring, but others will remain in the Ground until the Autumn or Spring following; but where the Seeds are preſerv'd above-ground till Spring before they are ſown, the Plants never come up till the Year after; ſo that by ſowing the Seeds as ſoon as they are ripe, there is many times a whole Year ſaved.

Theſe Plants, when they come up, ſhould be conſtantly clear'd from Weeds; which, if permitted to grow amongſt them, would cauſe their Bottoms to be naked, and many times deſtroy the Plants, when they continue long undiſturb'd.

In this Bed the Plants may remain two Years; after which, in the Autumn, there ſhould be a Spot of freſh undung'd Soil prepar'd, into which the Plants ſhould be remov'd the Beginning of *October*; placing them in Beds about four or five Feet wide, planting them in Rows about a Foot aſunder, and ſix Inches Diſtance from each other in the Rows; obſerving to lay a little Mulch upon the Surface of the Ground about their Roots, as alſo to water them in dry Weather until they have taken

ken Root; after which they will require no farther Care, but to keep them clear from Weeds in Summer, and to trim them according to the Purpoſe for which they are deſign'd.

In theſe Beds they may remain two or three Years, according as they have grown, when they ſhould be again remov'd into a Nurſery; placeing them in Rows at three Feet Diſtance, and the Plants eighteen Inches aſunder in the Rows; obſerving to do it in the Autumn, as was before directed, and continue to trim them in the Summer-ſeaſon, according to the Deſign for which they were intended; and after they have continued three or four Years in this Nurſery, they may be tranſplanted where they are to remain, always obſerving to remove them in the Autumn where the Ground is very dry; but on cold moiſt Land it is better in the Spring.

Theſe Trees are very ſlow in growing; but yet there are many very large Trees upon ſome barren cold Soils, in divers Parts of *England:* the Timber of theſe Trees is greatly eſteem'd for many Uſes.

TELEPHIOIDES, Baſtard Orpine. *Vide* Andrachne *and* Phyllanthos.

TELEPHIUM, Orpine, or Livelong.

The *Characters* are;

It hath a roſe-ſhap'd Flower, conſiſting of ſeveral Leaves plac'd orbicularly; out of whoſe many-leav'd Empalement riſes the Pointal, which afterward becomes a three-corner'd Fruit, conſiſting of one Cell, which is filled with roundiſh Seeds: to theſe Notes ſhould be added, That the Leaves are placed alternately on the Branches.

The *Species* are;

1. Telephium *Dioſcoridis. Imper.* The true Orpine of *Dioſcoridis,* according to *Imperatus.*

2. Telephium *Americanum, portulacæ folio. Inſt R. H.* American Orpine, with a Purſlain-leaf.

3. Telephium *maritimum, ſedi folio, flore rubello. Inſt. R. H.* Maritime Orpine, with an Houſleek-leaf, and a red Flower.

4. Telephium *maritimum, ſedi folio, flore albo. Inſt. R. H.* Maritime Orpine, with an Houſleek-leaf, and a white Flower.

The firſt Sort is a Native of *Italy, Spain,* and the Southern Parts of *France;* from whence the Seeds have been procur'd by ſome Perſons who are curious in Botany, who preſerve it in their Gardens for the ſake of Variety. It is a low Plant, whoſe Branches trail on the Ground: the Leaves are ſmall and roundiſh, of a glaucous Colour, and of a pretty thick Conſiſtence. The Flowers are ſmall, and of a whitiſh-green Colour; ſo that the whole Plant makes but an ordinary Appearance.

This Sort may be propagated by Seeds, which ſhould be ſown early in the Spring, on a Bed of freſh light Earth, in an open Situation; and when the Plants are come up, they ſhould be thinned, ſo as to leave them ſix or eight Inches aſunder; and they muſt be conſtantly kept clear from Weeds: for if theſe are permitted to grow, they will ſoon overbear the Plants, and deſtroy them.

In *June* they will begin to flower, and their Seeds will ripen in *Auguſt;* when they muſt be carefully watched to gather the Seeds, otherwiſe they will ſoon be ſcatter'd abroad; and if the Ground is not diſturb'd, the Plants will come up in plenty, and require no other Care, than to keep them clear from Weeds.

The ſecond Sort is a Native of *America,* from whence the Seeds have been brought to ſeveral curious Gardens in *Europe*. This is a tender Plant; ſo the Seeds ſhould be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be each tranſplanted into a ſmall ſeparate Pot with freſh light undung'd Earth, and then plunged into a moderate Hot-bed of Tanners Bark, obſerving to ſhade them from the Sun in the Middle of the Day for a little time, if the Weather ſhould prove hot, until they have taken new Root; after which time they ſhould have free Air admitted to them every Day, in proportion to the Warmth of the Seaſon; and in hot Weather they muſt be frequently refreſh'd with Water: but as the Leaves and Branches are ſucculent, they ſhould not have too much Moiſture, leſt it rot them. In *July* the Plants will begin to flower, and in *September* the Seeds will ripen, and the Plants will periſh ſoon after; for they are annual; ſo that if the Plants are not brought forward early enough in the Spring, they will not produce good Seeds in this Country.

The third Sort was brought from the *Cape of Good Hope*, where it grows in great Plenty near the Sea-ſide. The fourth Sort is a Variety of the third, only differing in the Colour of its Flower. Theſe Sorts may be propagated by Seeds, which ſhould be ſown on a moderate Hot-bed in the Spring; and when the Plants are come up, they may be tranſplanted on another moderate Hot-bed, to forward their Growth; and when they are pretty ſtrong, they ſhould be each planted into a ſeparate Pot filled with freſh Earth, and placed on a gentle Hot-bed, to forward their making new Roots; and in *June* they ſhould be enured to bear the open Air by degrees, into which they may be remov'd, and plac'd in a warm Situation, amongſt Ficoides's, and other ſucculent Plants, which are Natives of the ſame Country; where they may remain until *October*, when they ſhould be remov'd into an airy Glaſs caſe, where they may be treated in the ſame manner as hath been directed for the Ficoides's; with which Management theſe Plants will thrive very well. Theſe Plants may alſo be propagated by Cuttings, which may be taken from the old Plants during any of the Summer-months; and ſhould be laid to dry for a few Days before they are planted, in the ſame manner as is practis'd for other ſucculent Plants: then they may be planted in a Bed of light Earth, where they will ſoon take Root, and may be planted afterward in Pots, and treated as the ſeedling Plants.

TEREBINTHUS, The Turpentine-tree.

The *Characters* are;

It is Male and Female in different Plants: the Flowers of the Male have no Petals, but conſiſt of a Number of Stamina *with Chives: the Embryoes, which are produc'd on the Female Trees, afterward become an oval Fruit with an hard Shell, incloſing one or two oblong Kernels: to theſe Notes muſt be added, The Leaves are pennated, or wing'd, which are produc'd by Pairs, oppoſite, and end in a ſingle Lobe.*

The *Species* are;

1. TEREBINTHUS *vulgaris. C. B. P.* The common Turpentine-tree.

2. TEREBINTHUS *Indica Theophraſti, Piſtachia Dioſcoridis. Lob. Adv.* The Piſtachia-tree, *vulgo*.

3. TEREBINTHUS *peregrina, fructu majore, piſtachii ſimile, eduli. C. B.*

B. P. Foreign Turpentine-tree, with a larger eatable Fruit, like the Piſtachia-nut.

4. Terebinthus *peregrina, fructu minore & cœruleo, eduli. C. B. P.* Foreign Turpentine-tree, with a ſmaller blue eatable Fruit.

5. Terebinthus *ſeu Piſtachia trifolia. Inſt. R. H.* The three-leav'd Turpentine or Piſtachia-tree.

6. Terebinthus *Cappadocica. H. R. Par.* The Turpentine-tree of *Cappadocia*.

7. Terebinthus *Americana, piſtachiæ fructu non eduli. Plum. American* Turpentine-tree, with a Fruit like the Piſtachia-nut, which is not eatable.

8. Terebinthus *major, betulæ cortice, fructu triangulari. Sloan. Cat.* The Greater Turpentine-tree, with a Bark like the Birch-tree, and a triangular Fruit, commonly call'd, in the *Weſt-Indies*, The Birch-tree.

The ſecond Sort is much more common in the *Engliſh* Gardens than any of the other; becauſe the Nuts of the Piſtachia-tree are annually brought to *England* for the Table; and theſe, being planted, will grow very well; ſo that many of theſe Trees have been lately rais'd in *England*; whereas the Seeds of the other Sorts are rarely brought over.

The ſix Sorts firſt-mention'd are Natives of the Iſlands in the *Archipelago*, and ſome other Places in the Eaſt; from whence their Seeds have been brought into *Europe*, where the Plants have been preſerv'd by ſome curious Perſons.

The Seeds (or Nuts) of all theſe Trees ſhould be ſown in Pots fill'd with freſh light Earth, and plung'd into a moderate Hot-bed; obſerving to refreſh the Earth with Water frequently, as it may have Occaſion; and when the Plants are come up (which thoſe of the Piſtachia will do in ſix Weeks after ſowing), they ſhould be enured to bear the open Air by degrees, into which they muſt be remov'd the Beginning of *June*, placing them where they may be ſcreen'd from the Violence of the Winds; in which Situation they may remain until *October*, when they ſhould be remov'd either into a common Hot-bed-frame, or elſe into a Green-houſe, where they may be defended from hard Froſt; but ſhould have as much free Air as poſſible in mild Weather, and muſt be frequently refreſh'd with Water.

In *March* following theſe Plants ſhould be remov'd, and each planted in a ſeparate Pot fill'd with freſh light Earth; and as the Spring advances, they ſhould be again removed into the open Air, and plac'd amongſt other Exotic Plants, obſerving to water them frequently in dry Weather; and when their Roots are confin'd by the Smalneſs of the Pots, they muſt be ſhifted, being careful not to break the Earth off from their Roots; which will greatly injure them, unleſs it be done before the Plants begin to ſhoot in the Spring; for at that Seaſon they may be tranſplanted with as much Safety as any other deciduous Trees.

In this manner theſe Plants ſhould be treated for three or four Years, while young; after which time the Piſtachia's may be planted into the full Ground; obſerving to place them in a warm Situation, and dry Soil, where they will endure the Cold of our ordinary Winters very well; as may be ſeen by a very large Tree of this Kind, now growing in the Gardens of the Earl of *Peterborough* at *Parſons-green*, near *Fulham*, which produces abundance of Fruit, without any manner of Care: but theſe Fruit do not ripen in *England*. Theſe are Male and

Female in different Trees; ſo that in order to have good Fruit, there muſt be both Sexes planted near each other.

The other Sorts are as hardy as this; ſo may be treated in the ſame manner. There are ſome old Plants of the Turpentine-tree in the *Engliſh* Gardens, which are growing againſt Walls, and have reſiſted the Cold of our Winter many Years; though all theſe Sorts are tender while they are young, and muſt have a little Shelter for three or four Years, until the Plants have obtained Strength; after which they will live in the open Air, and are ſeldom injur'd but by ſevere Froſt.

The fifth and ſixth Sorts grow plentifully in the Iſland of *Jamaica*, and in ſeveral other Places in the *Weſt-Indies*; where the fifth Sort is called the *Hog-doctor*, or *Boar-tree*, and the ſixth Sort is called the *Birch-tree*. Theſe Trees grow to the Height of thirty or forty Feet in the Places of their natural Growth, and have very large Trunks. The fifth Sort produces ſmall purple Flowers at the Extremity of their Branches, which generally appear before the Leaves come out; for the Trees are deſtitute of their Leaves a conſiderable time. From the Trunk and Branches of this Tree, there iſſues out a Balſam of the Conſiſtence and Smell of Turpentine; which is greatly uſed by the Inhabitants to heal green Wounds.

The ſixth Sort produces ſmall purple Flowers at the Extremity of the Branches, which generally precede the Leaves, like the other Sort: for the Leaves of this Tree fall off in *November*; and in *February* they put out new ones. The Trunk and Branches of this Tree being wounded, there flows out a liquid Balſam, which the Inhabitants call *Hoggum*, and make uſe of it to vomit or purge in chronical Diſeaſes: the uſual Doſe is a Quarter of an Ounce for a ſtrong Man, which is given in a Glaſs of Water; and will certainly vomit in a Quarter of an Hour after taking, without making the Perſon ſick, or cauſing any Uneaſineſs. The Inhabitants of *Jamaica* confidently affirm, that when the wild Hogs are wounded, they will repair to theſe Trees, and rub againſt the Trunks till the Balſam flows out; when they rub their wounded Part on the Balſam, which cures them; which occaſion'd their calling it the *Hog-doctor-tree*.

Theſe Trees may be propagated either by Seeds or Cuttings; but the Seeds will not retain their growing Quality long; therefore they ſhould be put into a Box of Earth ſoon after they are ripe, and when the Plants are come up, and have obtained Strength, they may be brought to *England*; but there ſhould be great Care taken of them in their Paſſage, that they are not injur'd by ſalt Water; not ſhould they have much freſh Water given to them, eſpecially as they come into a cooler Climate; for too much Moiſture will ſoon deſtroy them. In like manner alſo ſhould the Cuttings of theſe Trees be managed; for they ſhould be planted in Tubs of Earth, and kept in the Country until they are well rooted; for if they are ſent over before they have taken good Root, they ſeldom come good to *England*. When theſe arrive, they ſhould be each tranſplanted into ſeparate Pots fill'd with freſh light Earth, and plung'd into a moderate Hot-bed of Tanners Bark; obſerving, if the Seaſon is very warm, to ſhade them from the Sun in the Heat of the Day, and refreſh them every other Day with Water; but do not give it them in great Quantities, leſt it rot their tender Roots. When the Plants have taken good Root, and recover'd the Injuries they receiv'd in their Paſſage, they may be treated in the ſame manner as is practis'd for other tender Exotic Plants, keeping them conſtantly in the Bark-ſtove; for they are too tender to live in the open Air in this Country. During the Winter-ſeaſon, when they are deſtitute of Leaves, they ſhould have but little Water; but in the Summer, when the Weather is warm, they may have frequent Refreſhings, and a good Share of Air ſhould be admitted to them at that Seaſon. With this Management the Plants will thrive, and afford an agreeable Variety in the Stove, amongſt other Plants of the ſame Country.

TERNATEA.

The *Characters* are;

It hath a papilionaceous (or pea-bloom) Flower, whoſe Standard almoſt hides the Keel, and the Wings: the Pointal afterward becomes a Pod, which opens two Ways, and is filled with kidney-ſhap'd Seeds: to theſe Notes ſhould be added, That the Leaves are winged, and are terminated by an odd Lobe.

The *Species* are;

1. TERNATEA *flore ſimplici cæruleo. Acad. Reg. Scien.* Ternatea with a ſingle blue Flower.

2. TERNATEA *flore pleno cæruleo. Acad. Reg. Scien.* Ternatea with a double blue Flower.

3. TERNATEA *flore ſimplici albido. Acad. Reg. Scien.* Ternatea with a ſingle white Flower.

4. TERNATEA *Americana perennis. flore cæruleo. Houſt. American* perennial Ternatea, with a blue Flower.

The Name which Dr. *Tournefort* has given to this Genus of Plants is, from the Place whence theſe Plants were firſt brought; which is one of the *Molucca* Iſlands, call'd *Ternate*.

The three firſt-mention'd Sorts are annual Plants, which periſh ſoon after they have perfected their Seeds: but the fourth Sort will abide ſeveral Years, provided the Plants are placed in a warm Stove. They are all of them tender Plants; ſo their Seeds ſhould be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be each tranſplanted into a ſeparate ſmall Pot fill'd with freſh light Earth, and then plung'd into a moderate Hot-bed of Tanners Bark; obſerving to ſhade them from the Sun until they have taken new Root, and often refreſh them with Water. As theſe Plants have very ſlender Branches, ſo they twiſt round whatever Plants grow near them; therefore they ſhould have Sticks thruſt into the Pots, for them to twine round, that they may be ſupported from trailing on the Ground. In warm Weather theſe Plants ſhould have a large Share of free Air admitted to them, otherwiſe they will draw up too weak; and when they are grown ſo tall as to reach the Glaſſes of the Hot-bed, they ſhould be taken out, and (after having ſhifted them into larger Pots) they ſhould be plung'd into the Bark-bed in the Stove, where they ſhould remain to flower, and perfect their Seeds.

The Flowers of the firſt and ſecond Sorts are of a very deep blue Colour; and, if put in Water, and macerated, will dye the Water almoſt as blue as *Indigo*. The ſecond Sort, having very double Flowers, makes a fine Appearance when it is in Flower; ſo is worthy of a Place in every good Garden, where there is Conveniency for bringing them to Perfection. For as they are very tender, if they are not brought forward early in the Spring, and carefully treated afterward, they will not perfect their Seeds in this Country.

The third Sort differs from the firſt only in the Colour of the Flower; ſo may be admitted for the ſake of Variety, tho' the Flowers are not near ſo beautiful.

The fourth Sort was diſcover'd by the late Dr. *William Houſtoun* in *Jamaica*, from whence he ſent the Seeds to *England*. This is an abideing Plant, which rarely produces any Flowers in this Country; for from ſeveral of theſe Plants, which have been raiſed in the Phyſic-garden, there has but one of them produc'd any Flowers; and that not more than three Flowers, tho' it has remain'd ſeveral Years.

TERRACES: A Terrace is a ſmall Bank of Earth, rais'd and trimm'd according to Line and Level, for the proper Elevation of any Perſon that walks round a Garden, that he may have a better Proſpect of all that lies round him; and theſe Elevations are ſo neceſſary, that thoſe Gardens that have them not, are deficient.

When Terraces are rightly ſituated, they are great Ornaments to ſuch Gardens as have them, for their Regularity and Opening; eſpecially when they are well built, and beautify'd with handſome Stairs, and fine Aſcents.

There are ſeveral Kinds of Terrace-walks:

1. The great Terrace, which lies next to the Houſe.
2. The ſide or middle Terrace, which is commonly raiſed above the Level of the Parterre, Lawn, *&c.*
3. Thoſe Terraces which encompaſs a Garden.
4. Thoſe Terraces which lie under one another, being cut out of a large Hill; and theſe are different one from another, in ſome reſpect or other.

As to the Breadth of ſide Terraces, this is uſually decided by its Correſpondence with ſome Pavilion, or ſome little Jettee or Building; but moſt of all by the Quantity of Stuff that is to ſpare for thoſe Purpoſes.

The ſide Terrace of a Garden ought not to be leſs than twenty Feet, and but very ſeldom wider than forty.

As for the Height of a Terrace, ſome allow it to be but five Feet high; but others more or leſs, according to their Fancies; but the more exact Perſons never allow above five or ſix Feet; and in a ſmall Garden, and a narrow Terrace-walk, three Feet; and ſometimes three Feet and an half high are ſufficient for a Terrace eighteen Feet wide; and four Feet are ſufficient for a Terrace of twenty Feet wide; but when the Garden is proportionably large, and the Terrace is thirty or forty Feet wide, then it muſt be at leaſt five or ſix Feet high.

The nobleſt Terrace is very deficient without Shade; for which Elm-trees are very proper: for no Seat can be ſaid to be complete, where there is not an immediate Shade almoſt as ſoon as out of the Houſe; and therefore theſe ſhady Trees ſhould be detach'd from the Body and Wings of the Edifice.

Terraces ſhould be planted rather with Elm or Lime-trees, than with Yew or Holly; which will not grow large enough to afford Shade.

The Diſtance of the Elms acroſs will be about twenty Feet; and they may be plac'd thirty Feet aſunder in Lines.

TETRAGONOCARPOS.

The *Characters* are;

It hath an apetalous Flower, whoſe Empalement is divided into four Parts: in the Middle of the Flower riſes the Pointal, attended by a great Number of Stamina, *crown'd with flat Summits, and reſt on the oval Pointal, which afterward becomes a Fruit, having four Wings or Corners, and four Cells; in each of which is contain'd one Seed.*

The *Species* are;

1. Tetragonocarpos *Africana fruticans, foliis longis & anguſtis. H. Amſt.* *African* ſhrubby Tetragonocarpos, with long narrow Leaves.

2. Tetragonocarpos *Africana, folio portulacæ longo, flore herbaceo. Boerh. Ind. alt.* *African* Tetragonocarpos, with a long Purſlain-leaf, and an herbaceous Flower.

3. Tetragonocarpos *Africana, radice magna craſſa & carnoſa. Hort. Amſt.* Tetragonocarpos with a large fleſhy Root, and oval Leaves.

The two firſt Sorts are pretty common in the *Engliſh* Gardens, where there are Collections of rare Plants. Theſe may be propagated by Cuttings, which ſhould be cut off from the Plants a few Days before they are planted, that the Part where they are cut may be healed, otherwiſe they will rot; for the Leaves and Stalks of this Plant are very full of Moiſture. The beſt time to plant theſe Cuttings is in *July*, that they may have time to make good Roots before Winter. Theſe Cuttings may be planted on a Bed of freſh Earth; and if the Cuttings are ſhaded from the Sun in the Heat of the Day, it will be of Service to them. They ſhould be frequently refreſh'd with Water; but they muſt not have it in too great Plenty, for that will rot them. In about ſix Weeks after Planting, the Cuttings will be ſufficiently rooted to tranſplant; therefore they ſhould be taken up, and planted into Pots fill'd with freſh light undung'd Earth, and plac'd in a ſhady Situation, until they have taken new Root; after which time they may be plac'd with other hardy Exotic Plants, in a ſhelter'd Situation, where they may remain till the Middle or Latter-end of *October*; at which time they ſhould be remov'd into the Green-houſe, and plac'd where they may enjoy as much free Air as poſſible in mild Weather; for they only require to be protected from the Froſt, being pretty hardy with reſpect to Cold; but they ſhould not have too much Moiſture in Winter. If theſe Plants are planted in the full Ground in the Summer-ſeaſon, they will grow prodigiouſly rank and large; as they alſo will, if they are permitted to root into the Ground through the Holes at the Bottom of the Pots; therefore the Pots ſhould be frequently remov'd to prevent it: for when they grow too freely, their Leaves will be very full of Moiſture; which, together with the Weight of the Fruit, which are always produc'd at the Extremity of the Branches, will weigh the Branches upon the Ground, and render the Plants very unſightly. The Plants of this Kind commonly grow very ſtraggling; therefore, the more their Roots are confin'd in the Pots, the more cloſe and ſtinted will be the Heads of the Plants; which is what they ſhould always be kept to, in order to render them ſightly. The Flowers of this Plant have no great Beauty; but as the whole Face of the Plant is peculiar, it may be allow'd a Place in every Collection of Plants, for the ſake of Variety; ſince it requires no great Trouble to cultivate it.

Theſe Plants may alſo be propagated

gated by Seeds, which ſhould be ſown on a warm Border of freſh light Earth, where ſometimes they will remain a whole Year before the Plants come up; therefore, when they do not come up the firſt Seaſon, the Borders ſhould not be diſturb'd, but kept conſtantly clear from Weeds; and when the Plants are come up about four Inches high, they ſhould be taken up, and planted in Pots (and treated in the ſame manner as hath been directed for the Cuttings); for if they are ſuffer'd to grow in the Border till they are large, they will not tranſplant ſo well; nor will they make ſo handſome Plants.

The third Sort hath large fleſhy Roots; the Branches are weak, and trail upon the Ground: theſe decay intirely about *Midſummer*, and new Shoots are produced in the Autumn. The Flowers are produced from the Wings of the Leaves in *February*; but this Sort ſeldom produces good Seeds; however, the Cuttings will grow, if they are planted early in the Spring; ſo that the Sort may be propagated with the ſame Facility as either of the other Kinds.

All theſe Sorts require Protection in Winter; but if they are plac'd in an airy Glaſs-caſe, with Ficoides, and other hardy Plants, where they may have a large Share of free Air in mild Weather, and protected from the Froſt, they will thrive much better than when they are more tenderly treated.

TETRAGONOTHECA, Sunflower, *vulgo*.

The *Characters* are;

It hath a compound Flower, compoſ'd of ſeveral Florets, which are tubulous; theſe are Hermaphrodite, and are ſituated in the Middle; the Half-florets, which compoſe the Rays, are Female: theſe have one Segment ſtretch'd out like a Tongue, which is cut into three acute Segments; theſe are all included in one common Empalement, which is cut into four large Segments: the Florets are ſucceeded by one naked oval Seed: to which Notes may be added, The Empalement of the Flower ſwells like a Bladder, and is four-corner'd; which diſtinguiſhes it from all the Plants of this Tribe.

We have but one *Species* of this Genus; *viz.*

TETRAGONOTHECA *doronici maximi folio. Hort. Elth.* Dwarf Sunflower, with a Leaf like the greater Leopard's-bane.

This Plant is a Native of *Carolina*, from whence the Seeds were brought to *Europe*; and the Plants are now growing in ſome curious Gardens. The Roots of this Plant are perennial; but the Stalks are annual, and periſh in the Autumn on the Approach of Cold. The Roots will abide through the Winter in the full Ground, if they are planted in a warm Situation; ſo do not require any Shelter, except in very ſevere Winters; when, if they are cover'd over with rotten Tan, or Peas-haulm, to keep out the Froſt, there will be no Danger of their being kill'd.

About the Latter-end of *April*, or the Beginning of *May*, the Roots will ſend forth new Shoots; which are garniſh'd with large oblong rough Leaves, plac'd by Pairs oppoſite to each other, cloſely embracing the Stalks: theſe are a little ſinuated on their Edges, and are cover'd with ſmall Hairs. The Stalks uſually grow about two Feet high in *England*, and branch out toward the Top into ſeveral ſmaller Stalks, each having one large yellow Flower at their Top, ſhap'd like a Sunflower; which, before it expands, is cover'd with the inflated Empalement, which is four-corner'd. The Seeds of this Plant rarely ripen in *England*; but when they are obtain'd from Abroad, they ſhould be ſown in the full Ground in the Spring of the Year; where, ſometimes, they will remain a Year before the Plants come up: ſo that if they do not come up the ſame Year, the Ground ſhould not be diſturb'd, but kept clean from Weeds, and wait till the ſecond Year to ſee what Plants will come up. When the Plants appear, they muſt be kept clean from Weeds; and if the Seaſon ſhould prove dry, they will require to be frequently water'd. In the Autumn the Plants ſhould be tranſplanted into the Places where they are to remain.

Theſe Plants will live Years, and may be propagated by Off-ſets; but theſe are not produced in Plenty: ſo that the beſt Method is by Seeds, when they can be procur'd.

TEUCRIUM, Tree-germander.

The *Characters* are;

The Flower-cup is divided into five Parts at the Top; but is of the bell-ſhaped Kind: the Flower has no Galea *or Creſt; but, inſtead thereof, the* Stamina *occupy the upper Part: the Beard, or Lower-lip, is cut into five Parts: the middle Segment, being larger, is hollow'd like a Spoon: in the Centre of the Flower riſes the Pointal, attended by four Embryoes, which afterward become ſo many Seeds, ſhut up in an Huſk, which was before the Flower-cup: to theſe Notes ſhould be added, The Flowers are produced from the Wings of the Leaves.*

The *Species* are;

1. Teucrium *multis. J. B.* Common Tree-germander.

2. Teucrium *Bæticum. Cluſ. Hiſt.* *Spaniſh* Tree-germander.

3. Teucrium *Bæticum, calyce campanulato, folio eleganter variegato. Boerh. Ind.* *Spaniſh* Tree-germander, with a ſtriped Leaf.

4. Teucrium *Hiſpanicum, latiore folio. Inſt. R. H.* *Spaniſh* Tree-germander, with a broader Leaf.

5. Teucrium *ſupinum perenne, foliis laciniatis. Inſt. R. H.* Low perennial Germander, with jagged Leaves.

6. Teucrium *ſupinum annuum Luſitanicum, foliis laciniatis. Inſt. R. H.* Low annual *Portugal* Germander, with jagged Leaves.

7. Teucrium *fruteſcens, ſtœchadis Arabicæ folio & facie. Tourn. Cor.* Shrubby Germander, with the Leaf and Face of *Arabian* Stœchas.

8. Teucrium *Orientale latifolium laciniatum, flore parvo. Tourn. Cor.* Broad jagged-leav'd Eaſtern Germander, with a ſmall Flower.

9. Teucrium *Orientale anguſtifolium laciniatum, flore magno ſuaverubente. Tourn. Cor.* Narrow jagged-leav'd Eaſtern Germander, with a large ſoft-red Flower.

10. Teucrium *Orientale anguſtifolium laciniatum, flore magno ſubcæruleo. Tourn. Cor.* Narrow jagged-leav'd Eaſtern Germander, with a large blue Flower.

11. Teucrium *Hiſpanicum ſupinum humilius, verbenæ tenuifoliæ foliis. Jeſſieu.* Low-trailing *Spaniſh* Germander, with Leaves like the narrow-leav'd Vervain.

12. Teucrium *Creticum odoratum, flore purpureo. H. R. Par.* Sweet Germander of *Crete*, with a purple Flower.

13. Teucrium *Americanum, halicacabos & alopecuroides. Plum. Cat.* *American* Tree-germander, with a bladder Seed-veſſel like the Winter-cherry, and ſpiked like the Fox tail.

14. Teucrium *Americanum, chamædryos folio, flore albo. Houſt.* *American* Tree-germander, with a common Germander-leaf, and a white Flower.

The firſt Sort here mentioned was formerly preſerv'd in Green-houſes with great Care; but of late Years it hath been planted out into the open Air, and is found hardy enough to endure the Cold of our ſevereſt Winters without Shelter, provided it be planted on a dry Soil.

This may be propagated by planting Cuttings in the Spring, on a Bed of freſh light Earth, obſerving to ſhade and water them until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds, until the following Spring; when they may be tranſplanted out into the Places where they are to remain, being careful in removing them not to ſhake off all the Earth from their Roots, as alſo to water them until they have taken freſh Root; after which the only Care they require, is to keep the Ground clean about them, and to prune off ſuch Shoots as are ill ſituated; whereby their Heads will appear more regular.

It may alſo be propagated by Seeds, which generally are produc'd in Plenty: if theſe are ſown upon a Bed of light Earth in *April*, the Plants will come up in ſix Weeks after; and theſe may be tranſplanted in Autumn, where they are deſign'd to remain.

The *Spaniſh* Sort is tenderer than the former, tho' that will endure the Cold of our ordinary Winters, if planted on a dry Soil, and in a warm Situation; but in a ſevere hard Froſt it is often deſtroyed; for which Reaſon the Plants are generally preſerv'd in Pots, and removed into the Green-houſe in Winter. This is propagated in the ſame manner as the former.

The Sort with ſtriped Leaves is leſs common than the plain, and is valued by thoſe that delight in variegated Plants. This is ſomewhat tenderer than the plain Sort; but may be propagated and preſerved in the ſame manner, only obſerving to place it in a warmer Part of the Green-houſe in Winter.

The fourth Sort here mention'd is very like to the *Bætic* Tree-germander; from which it differs in the Leaves being broader, the Shoots ſtronger, and the young Shoots being whiter. This Sort may be propagated by Cuttings, in the ſame manner as hath been directed for that Sort, and afterwards treated in the ſame Way.

The ſeventh and twelfth Sorts are alſo ſhrubby Plants, which may be propagated and treated in the ſame manner as hath been directed for the fourth; with which Management theſe will thrive very well, and may be allowed to have a Place in the Gardens, for the ſake of Variety.

The fifth Sort is a low-trailing Plant, which puts out Roots from the Joints of the Stalks, whereby it may eaſily be propagated, as alſo from the Seeds, which require no farther Care, than to ſow them on a Bed of freſh Earth, in an open Situation; and when the Plants are come up, they muſt be kept clear from Weeds; and where they are too cloſe, ſome of them ſhould be drawn out, to give room for the others to grow. This Sort will ripen Seeds very well in this Country; and, if planted in a warm Situation, will endure the Cold of our ordinary Winters very well.

The ſixth, eighth, ninth, and eleventh Sorts are annual Plants, of humble Growth. Theſe are propagated by Seeds, which ſhould be ſown on a Bed of freſh Earth in *March*; and when the Plants are come up, they muſt be thinned where they are too cloſe, and kept clear from Weeds, which is all the Culture they require; for as they are Plants which make no great

Figure in a Garden, ſo they are ſeldom cultivated: a few Plants of each Sort, for the ſake of Variety, are as many as any curious Perſon commonly keeps. Theſe Plants will drop their Seeds, and the Plants will come up from the ſelf-ſown Seeds, full as well, if not better, than when they are ſown by Hand; ſo may be eaſily maintained.

The thirteenth Sort was diſcover'd by Father *Plumier*, in the *French* Settlements in *America*; and the fourteenth was diſcovered by the late Dr. *Houſtoun*, at the *Havannah*; from whence he brought the Seeds to *England*. Theſe are both very tender Plants, ſo muſt be preſerved in a Stove, otherwiſe they will not live thro' the Winter in this Country. They may be propagated by Seeds, which ſhould be ſown on a moderate Hot-bed in the Spring; and when the Plants are come up, they ſhould be each tranſplanted in a ſeparate ſmall Pot fill'd with freſh light Earth, and then plunged into a moderate Hot-bed of Tanners Bark, and ſhaded from the Sun in the Heat of the Day, until they have taken new Root; after which time they ſhould have a large Share of free Air admitted to them in warm Weather, and muſt be plentifully watered. When theſe Plants are brought forward early in the Spring, ſome of them will produce their Flowers the ſame Seaſon; but they rarely produce ripe Seeds the firſt Year; ſo the Plants ſhould be removed into the Stove at *Michaelmas*, and, during the Winter-ſeaſon, ſhould have a moderate Share of Heat, and will require to be frequently refreſhed with Water; but it muſt not be given to them in large Quantities when the Weather is cold; for that will often occaſion their Leaves falling off. Theſe Plants, which are prepreſerved through the Winter, will flower early the following Spring, and produce good Seeds; and the old Plants may be preſerved three or four Years, if they are conſtantly kept in a Stove.

THALICTRUM, Meadow-rue.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves plac'd orbicularly, which expand in form of a Roſe; in the Middle of which ariſe numerous Cluſters of Chives, encompaſſing the Pointal, which afterward becomes a Fruit; in which are collected, as in a little Head, the Capſules, which are ſometimes wing'd, and ſometimes without Wings, each containing one Seed, for the moſt part oblong.

The *Species* are;

1. THALICTRUM *Alpinum, aquilegiæ foliis, florum ſtaminibus purpuraſcentibus. Tourn. Alpine* Meadow-rue, with Columbine-leaves, and the Chives of the Flowers of a purpliſh Colour, commonly called the feather'd Columbine.

2. THALICTRUM *Alpinum majus, aquilegiæ foliis, florum ſtaminibus albis, caule viridi. Tourn.* Greater *Alpine* Meadow-rue, with Columbine-leaves, white Chives to the Flowers, and a green Stalk.

3. THALICTRUM *Canadenſe, caule purpuraſcente, aquilegiæ foliis, florum ſtaminibus albis. Tourn. Canada* Meadow-rue, with a purpliſh Stalk, Columbine-leaves, and white Chives to the Flower.

4. THALICTRUM *Americanum minus. Park. Theat.* Leſſer *American* Meadow-rue.

5. THALICTRUM *majus, ſiliqua anguloſa aut ſtriata. C. B. P.* Greater Meadow-rue, with an angular furrow'd Pod.

6. THALICTRUM *pratenſe majus, Monſpelienſium, foliis rugoſis. H. R. Par.* Greater *Montpelier* Meadow-rue, with rough Leaves.

7. THALICTRUM *majus, non ſtriatum,*

tum. C. B. P. Greater ſmooth Meadow-rue.

8. THALICTRUM *majus flavum, ſtaminibus luteis, vel glauco folio. C. B. P.* Greater yellow Meadow-rue, with yellow Chives, and a ſea-green Leaf.

9. THALICTRUM *magnum, flore luteo odorato. Vir. Luſit.* Greater Meadow-rue, with a yellow ſweet Flower.

10. THALICTRUM *minus, aſphodeli radice, parvo flore. Inſt. R. H.* Smaller Meadow-rue, with an Aſphodel-root, and a ſmall Flower.

11. THALICTRUM *minus, aſphodeli radice, magno flore. Inſt. R. H.* Smaller Meadow-rue, with an Aſphodel-root, and a large Flower.

12. THALICRUM *minus. C. B. P.* Smaller Meadow-rue.

13. THALICTRUM *pratenſe anguſtifolium. C, B. P.* Narrow-leav'd Meadow-rue.

14. THALICTRUM *pratenſe, anguſtiſſimo folio. C. B. P.* The narroweſt-leav'd Meadow-rue.

15. THALICTRUM *minus alterum Pariſienſium, foliis craſſioribus & lucidis. H. R. Par.* Another ſmall Meadow-rue of *Paris*, with thicker ſhining Leaves.

16. THALICTRUM *minimum fœtidiſſimum. C, B. P.* The leaſt and moſt ſtinking Meadow-rue.

17. THALICTRUM *montanum minus, foliis latioribus. Raii Syn.* Small mountain Meadow-rue, with broader Leaves.

18. THALICTRUM *minimum montanum atro-rubens, foliis ſplendentibus. Raii Syn.* Smalleſt mountain Meadow-rue, with blackiſh-red ſhining Leaves.

All theſe Sorts are commonly known by the Name of Feather'd or *Spaniſh* Columbine among the Gardeners; which Names, I ſuppoſe, they received from the Similitude that the Leaves of this Plant bear to thoſe of Columbine, tho' their Flowers are very different therefrom.

The fifth Sort here mention'd grows plentifully in moiſt Meadows, in divers Parts of *England*. The ſixth Sort is found growing wild about *Newmarket*, and on chalky Grounds in ſeveral Parts of *England*. The ſeventeenth and eighteenth Sorts grow wild on the rocky Mountains of *Wales*; from whence they have been tranſplanted into ſome curious Gardens, where they are preſerved for the ſake of Variety.

The other Sorts are not Natives of *England*; yet being equally hardy with the former, will thrive in the open Air very well. Moſt of theſe Plants have creeping Roots, by which they ſpread very far, and may be eaſily propagated; but they ſhould not be planted amongſt other Plants, becauſe theſe will overbear and deſtroy them. Theſe Plants ſhould be planted in a moiſt Soil, otherwiſe they will not flower very ſtrong. The beſt time to tranſplant them is about *Michaelmas*, that they may be well rooted before the dry Weather comes on in the Spring.

The fifth, ſixth, ſeventh, eighth, thirteenth, and fourteenth Sorts are tall Plants, and may be planted among other Plants of the ſame Growth, which delight in a moiſt Soil, in ſome obſcure Part of the Garden, where better Things will not thrive; in which Places theſe will thrive and flower, and maintain themſelves without any other Care, but to keep them clear from very large Weeds, which would overbear and deſtroy them.

The other Sorts are of humble Growth, ſome of them ſeldom riſing above ſix Inches high, and the others not more than a Foot; but theſe may be planted in ſhady Borders with other hardy Plants, where they will thrive very well, provided they are watered in dry Weather, and will abide ſeveral Years. All theſe Sorts will flower in *May* and *June*, and their Seeds are ripe toward the End of *Auguſt*: but as theſe propagate ſo faſt by their Roots, they are rarely raiſed from Seeds, which is a more tedious Method; for it is commonly three Years before the Seedling-plants produce their Flowers ſo ſtrong as the old ones.

Theſe Plants are propagated by parting their Roots: the beſt time for this Work is in *September*, when their Leaves begin to decay, that they may take freſh Root before the Froſt comes on to prevent them. They ſhould alſo be planted in a freſh light Soil, and have a ſhady Situation, in which they will thrive exceedingly; though they may be planted in almoſt any Soil or Situation, provided it be not too hot and dry. Theſe Roots ſhould not be parted or removed oftener than every other Year; but if they are permitted to ſtand three Years, they will flower much ſtronger for it.

Theſe Plants flower from the Beginning of *May* to the Beginning of *June*; and if the Seaſon be moderate, they will continue in Beauty a long time: this, together with their being hardy Plants, which require little Culture, renders ſome of the beſt Kinds worthy of a Place in every good Flower-garden; as their Flowers are very proper to intermix with others, for Baſons to adorn Halls, Chimneys, &c. in the Summer-time.

THAPSIA, The Deadly Carrot, or ſcorching Fenel.

The *Characters* are;

It hath an umbellated roſe-ſhaped Flower, conſiſting of five Petals, which are placed in a circular Order, and reſt on the Empalement; which afterward becomes a Fruit, compoſed of two long furrowed Seeds, which have a large leafy Border.

The *Species* are;

1. THAPSIA *maxima, latiſſimo folio. C. B. P.* The greateſt Scorching-fenel, with a very broad Leaf.

2. THAPSIA *latifolia villoſa. C. B. P.* Broad-leav'd hairy Scorching-fenel.

3. THAPSIA *foliis libanotidis, fœtidiſſima. C. B. P.* The moſt ſtinking Scorching-fenel, with Herb-frankincenſe-leaves.

4. THAPSIA *apii folio, Luſitanica fœtidiſſima, flore albo. Inſt. R. H.* The moſt ſtinking *Portugal* Scorching-fenel, with a Smallage-leaf, and a white Flower.

5. THAPSIA *tenuiore folio, Apula. Inſt. R. H. Apulian* Scorching-fenel, with a narrow Leaf.

6. THAPSIA *ſive Turbith Garganicum, ſemine latiſſimo. J. B.* Scorching-fenel with very broad Seeds, whoſe Roots were ſuppoſed to be the Turbeth.

7. THAPSIA *Alpina lucida, thalictri aut carotæ folio, flore albo. Bocc. Muſ.* Shining Scorching-fenel of the *Alps*, with a Meadow-rue or Carrot-leaf, and a white Flower.

8. THAPSIA *thalictri folio, Luſitanica villoſa. Inſt. R. H.* Hairy *Portugal* Scorching-fenel, with a Meadow-rue-leaf.

9. THAPSIA *Orientalis, anethi folio, ſemine eleganter crenato. Tourn. Cor.* Eaſtern Scorching-fenel, with a Dill-leaf, and Seeds beautifully notched.

10. THAPSIA *Orientalis aquatica, angelicæ folio. Tourn. Cor.* Eaſtern Water Scorching-fenel, with an Angelica-leaf.

11. THAPSIA *Cretica, thalictri folio, villoſa, ſeminum alis purpureo-violaceis. Tourn. Cor.* Hairy Scorching-

ing-fenel of *Crete*, with a Meadow-rue-leaf, and Seeds with purple-violet Borders.

12. Thapsia *carotæ folio. C.B.P.* Scorching-fenel with a Carrot-leaf.

The firſt Sort grows plentifully in ſeveral Parts of *Spain*, and on the *Pyrenees*, where the Inhabitants ſometimes uſe the Roots in Medicine; but it purges upward and downward with ſo much Violence, that it frequently puts thoſe who take it in great Hazard of their Lives.

The ſixth Sort, whoſe Roots have by ſome Botaniſts been ſuppoſed to be the Turbith of the Shops, grows on the Coaſt of *Africa*; from whence the Seeds have been brought into ſeveral curious Gardens in *Europe*, where the Plant is preſerved by thoſe who delight in Botany.

The twelfth Sort is mention'd in the Catalogue of Plants inſerted in the College Diſpenſatory, but is rarely uſed in Medicine; for it is of ſuch an acrid burning Quality, that it is very dangerous to take inwardly; but, outwardly applied, it takes off Blemiſhes and Scabs from the Skin.

All theſe Plants are very hardy as to Cold; ſo that they will thrive in the open Air in this Country: they ſhould have a loamy Soil, and in dry Weather ſhould be watered, otherwiſe their Flowers will fall off, without producing good Seeds. Theſe Plants are only propagated by Seeds, which ſhould be ſown in Autumn; for if they are kept out of the Ground till Spring, they often miſcarry; or if they grow, they commonly lie in Earth a whole Year before the Plants come up; whereas thoſe Seeds which are ſown in Autumn, generally grow the following Spring. Theſe ſhould be ſown in Drills, in the Place where they are deſigned to remain: the Drills ſhould be at leaſt two Feet aſunder, becauſe the Plants ſpread their Leaves very wide. When the Plants come up in Spring, they muſt be carefully clear'd from Weeds; and where they are too cloſe together, ſome of them ſhould be drawn out, to give room for the others to grow; but at this time they need not be left more than two or three Inches apart: for the firſt Year the Plants ariſe from Seeds, they make but ſlow Progreſs; ſo the Autumn following the remaining Part of the Plants may be taken up, leaving thoſe which are deſign'd to remain, about eighteen Inches aſunder; and thoſe Plants which are taken up, may be tranſplanted into another Bed, if they are wanted. After the firſt Year theſe Plants will require no farther Care but to keep them clear from Weeds; and every Spring, juſt before the Plants begin to puſh out new Leaves, the Ground ſhould be carefully dug between the Plants, to looſen it; but the Roots muſt not be injured, leſt it ſhould cauſe them to decay. The Plants, being thus managed, will continue ſeveral Years, and produce Flowers and Seeds annually; from which new Plants may be raiſed.

THLASPI, Mithridate-muſtard.

The *Characters* are;

The Flower conſiſts of four Leaves, which are placed in form of a Croſs; out of whoſe Cup riſes the Pointal, which afterward becomes a ſmooth annular Fruit, having commonly a leafy Border, and ſlit on the upper Side, divided into two Cells by an intermediate Partition placed obliquely with reſpect to the Valves, and furniſh'd with ſmooth roundiſh Seeds: to theſe Marks muſt be added, The undivided Leaves, which diſtinguiſh it from Creſſes.

The *Species* are;

1. Thlaspi *arvenſe, ſiliquis latis.*

latis. *C. B. P.* Field Mithridate-muſtard, with broad Pods.

2. Thlaspi *roſa de Hierico dictum*. *Mor. Hiſt.* Mithridate-muſtard, call'd The Roſe of *Jericho*.

3. Thlaspi *arvenſe, vaccariæ incano folio*. *C. B. P.* Common Mithridate-muſtard.

4. Thlaspi *vaccariæ incano folio, minus*. *C. B. P.* Small hoary-leav'd Mithridate-muſtard.

5. Thlaspi *capſulis hirſutis*. *J. B.* Mithridate-muſtard with hairy Pods.

6. Thlaspi *capſula cordata, peregrinum*. *J. B.* Foreign Mithridate-muſtard, with an heart-ſhap'd Pod.

7. Thlaspi *allium redolens*. *Mor. Hiſt.* Mithridate-muſtard ſmelling like Garlick.

8. Thlaspi *arvenſe perfoliatum majus*. *C. B. P.* Greater field Mithridate-muſtard, with Thorough-wax-leaves.

9. Thlaspi *perfoliatum minus*. *C. B. P.* Smaller thorough-wax-leav'd Mithridate-muſtard.

10. Thlaspi *parvum ſaxatile, flore rubente*. *C. B. P.* Small rock Mithridate-muſtard, with a rediſh Flower.

11. Thlaspi *Alpinum, folio rotundiore carnoſo, flore purpuraſcente*. *Inſt. R. H.* Mithridate-muſtard, of the *Alps*, with a rounder fleſhy Leaf, and a purpliſh Flower.

12. Thlaspi *minimum Luſitanicum, cochleariæ folio*. *Inſt. R. H.* The leaſt *Portugal* Mithridate-muſtard, with a Scurvygraſs-leaf.

13. Thlaspi *Alpinum minimum, foliis craſſis & anguſtis*. *Inſt. R. H.* The leaſt Mithridate-muſtard of the *Alps*, with narrow fleſhy Leaves.

14. Thlaspi *Luſitanicum umbellatum, gramineo folio, flore purpuraſcente & albo*. *Inſt. R. H.* *Portugal* Mithridate-muſtard, with a Graſs-leaf, and purpliſh or white Flowers growing in an Umbel.

15. Thlaspi *Orientale ſaxatile, flore rubente, foliis polygalæ, petalis florum æqualibus*. *Tourn. Cor.* Eaſtern rock Mithridate-muſtard, with Milkwort-leaves, and rediſh Flowers, whoſe Petals are equal.

16. Thlaspi *Orientale tenuifolium caneſcens, flore albo*. *Tourn. Cor.* Eaſtern Mithridate-muſtard, with narrow Leaves, which are hoary, and a white Flower.

17. Thlaspi *Orientale glabrum, ſamoli foliis*. *Tourn. Cor.* Smooth Eaſtern Mithridate-muſtard, with Samolus-leaves.

18. Thlaspi *Orientale, folio cynocrambes, flore minimo*. *Tourn. Cor.* Eaſtern Mithridate-muſtard, with a Dogs-mercury-leaf, and a very ſmall Flower.

19. Thlaspi *Orientale fruticoſum, ſcammonii Monſpelienſis folio*. *Tourn. Cor.* Shrubby Eaſtern Mithridate-muſtard, with the Leaf of *Montpelier* Scammony.

20. Thlaspi *foliis globulariæ*. *J. B.* Treacle-muſtard with Leaves like Globularia.

21. Thlaspi *ſpicatum Perſicum perfoliatum maximum, foliis inferioribus tenuiter inciſis hypecoi modo, ſuperioribus a caule perfoliatæ modo penetratis*. *Mor. Hiſt.* Spiked *Perſian* Treacle-muſtard, with the under Leaves finely cut like thoſe of Hypecoum, and the upper Leaves like Thorough-wax.

The firſt Sort is ſometimes found wild in *England*: but not near *London*. This is the Sort of which the College of Phyſicians have order'd the Seeds to be us'd in ſome of the grand Medicines of the Shops; though the Seeds of ſeveral other Plants are commonly ſubſtituted inſtead of it, becauſe the Seeds of this Sort are not very common in *London*; but the Plants might be eaſily cultivated in ſuch Plenty, as to furniſh the Town with the right Sort, as they are extreme hardy, and require no other Culture but to ſow the Seeds in *February*, upon an open Spot of Ground; and when the Plants are come up, they muſt be conſtantly clear'd from Weeds. In *June* they will flower, and the Seeds will ripen ſoon after; when the Plants always periſh, being annual.

The ſecond Sort is called Roſe of *Jericho:* this is a Plant of no great Beauty or Uſe; ſo is ſeldom cultivated, except in Botanic Gardens. It requires the ſame Culture as the former Sort, and is alſo an annual Plant; but the Seeds rarely ripen in *England*.

The third Sort grows plentifully wild amongſt the Corn, and by the Sides of Hedges, in moſt Parts of *England*. The Seeds of this Sort are generally ſold by the Druggiſts in *London*, for the true Mithridate-muſtard; but the firſt Sort is what the College of Phyſicians have directed to be us'd in the *Theriaca*.

The fourth, eighth, ninth, and twentieth Sorts alſo grow wild in ſome Parts of *Great Britain*; but are not ſo common as the former Sorts, eſpecially the twentieth, which is found in the mountainous Paſtures in *Yorkſhire*, and ſome other Places in the North; but is not to be met with in the South, unleſs in ſome curious Botanic Gardens; where it is preſerv'd for the ſake of Variety.

The tenth, eleventh, twelfth, thirteenth, and fourteenth Sorts are found wild on the *Alps*, and in *Spain*, *Portugal*, and *Italy:* theſe are preſerved in the Gardens of thoſe Perſons who are curious in Botany, for the ſake of Variety.

The fifteenth, ſixteenth, ſeventeenth, eighteenth and nineteenth Sort, were diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent their Seeds to the *Royal Garden* at *Paris*.

Moſt of theſe Sorts are annual Plants, which, if permitted to ſhed their Seeds on the Ground, will ſucceed much better than when ſown by Hand, eſpecially if they are not ſown in Autumn; for when the Seeds are ſown in the Spring, if the Seaſon ſhould prove dry, they ſeldom grow; and if they do come up, the Plants will be very ſmall, and produce little Seed: whereas thoſe Plants which come up in Autumn, will abide the Winter's Cold very well, and the following Spring will get Strength before the hot Weather comes in; ſo will flower, and produce plenty of Seeds.

Some of theſe Sorts produce pretty Flowers growing in Cluſters, which renders them worthy of a Place in large Gardens, where there is room for Variety, eſpecially as they require very little Trouble to cultivate them: for none of theſe Sorts ſhould be tranſplanted, but ſown where they are deſign'd to remain; and if they are kept clear from Weeds, it is all the Culture they require. Many of theſe Plants will grow on the Top of old Walls, or other Buildings; where they will ſhed their Seeds, and maintain themſelves without Care; and growing very low and ſtinted, will produce a great Number of Flowers; which will make a pretty Appearance in the Spring, when they are in Flower.

The nineteenth Sort grows to the Height of two Feet or more, and becomes ſhrubby. The Flowers of this Kind are ſmall, and do not make a very good Appearance; but the Plant is preſerv'd by ſome curious Perſons, for the ſake of Variety. This Sort may be propagated by Cuttings during any of the Summer-months, in like manner as the Candy-tuft-tree; but is ſomewhat tenderer; and, when it is rooted, ſhould be planted in Pots, and ſhelter'd in Winter, in the ſame manner as hath been directed for that Sort; for which ſee *Iberis*.

The twenty-firſt Sort is generally ſuppoſed to be the firſt *Thlaſpi* of *Dioſcorides*, the Seeds of which he preſcribes for medicinal Uſe: the lower Leaves of this Plant are cut into very fine Segments, ſo as at the firſt Appearance to reſemble the wild Camomile; but when the Stems ariſe they are garniſhed with oval intire Leaves, which embrace them like the Thorough-wax, to which they bear a great Reſemblance.

This is an annual Plant, which periſhes when the Seeds are ripe; and if the Seeds are permitted to ſcatter, the Plants will come up in Autumn, and live thro' the Winter; or the Seeds ſhould be ſown in Autumn; for thoſe which are ſown in Spring, do ſeldom live to perfect Seeds.

THLASPIDIUM, Mithridate-muſtard.

The *Characters* are;

The Flower conſiſts of four Leaves, which are placed in form of a Croſs; out of whoſe Cup riſes the Pointal, which afterward becomes a double ſmooth Fruit, compoſed of two Parts, that are ſeparated by an intermediate Partition; each of which ſwells with a red Seed, which is generally flat and oblong.

The *Species* are;

1. THLASPIDIUM *Monſpelienſe, hieracii folio hirſuto. Inſt. R. H.* *Montpelier* Thlaſpidium, with an hairy Hawkweed-leaf.

2. THLASPIDIUM *hirſutum, calyce floris auriculato. Inſt. R. H.* Hairy Thlaſpidium, with an eared Flower-cup.

3. THLASPIDIUM *annuum, flore pallido luteo. Inſt. R. H.* Annual Thlaſpidium, with a pale yellow Flower.

4. THLASPIDIUM *raphani folio. Inſt. R. H.* Radiſh-leav'd Thlaſpidium.

5. THLASPIDIUM *anchuſæ folio. Inſt. R. H.* Alkanet-leav'd Thlaſpidium.

6. THLASPIDIUM *Apulum ſpicatum. Inſt. R. H.* Spiked Thlaſpidium of *Apulia*.

7. THLASPIDIUM *montanum anguſtifolium glabrum. Inſt. R. H.* Smooth narrow-leav'd mountain Thlaſpidium.

8. THLASPIDIUM *Alpinum pumilum aſperum. Inſt. R. H.* Low rough Thlaſpidium of the *Alps*.

9. THLASPIDIUM *Apulum incanum, floribus ex albo purpuraſcentibus. Inſt. R. H.* Hoary Thlaſpidium of *Apulia*, with white-purpliſh Flowers.

10. THLASPIDIUM *Hiſpanicum, ampliore flore, folio craſſo dentato. Hort. Elth.* *Spaniſh* Thlaſpidium, with a large Flower, and a thick indented Leaf.

All the Sorts are annual or biennial Plants (except the laſt), which periſh ſoon after they have perfected their Seeds. Theſe are Plants of no great Beauty; ſo are rarely cultivated, except in the Gardens of thoſe who are curious in Botany. If the Seeds of theſe are ſown upon a Bed of light Earth in the Autumn, the Plants will abide the Winter, and will flower ſtrong the following Spring; and from theſe a much greater Quantity of Seeds may be ſav'd.

The laſt Sort is a perennial Plant, which at preſent is very rare in *England*: this produces Flowers much larger than thoſe of the Candy-tuft-tree, which makes a fine Appearance in the Winter-ſeaſon. This Sort muſt be treated in the ſame manner as the Candy-tuft-tree, and is propagated by Cuttings in the ſame way.

THISTLE. *Vide* Carduus.

THORN-APPLE. *Vide* Stramonium.

THORN, the *Glaſtenbury*. *Vide* Meſpilus.

THUYA, The Arbor Vitæ, *vulgo*.

The *Characters* are;

The Leaves are ever-green, and compreſs'd, having ſmall oblong ſquamous Cones on the Back-ſides, in which the Seeds are contain'd.

The *Species* are;

1. Thuya *Theophraſti*. *C. B. P.* The Arbor Vitæ, or Tree of Life.

2. Thuya *Theophraſti, folio variegato*. The ſtriped Arbor Vitæ, or Tree of Life.

3. Thuya *ſtrobilis uncinatis, ſquamis reflexo-acuminatis. Lin. Hort. Cliff.* The *China* Arbor Vitæ.

The firſt Sort was formerly in greater Eſteem than at preſent in the *Engliſh* Gardens: it was commonly rais'd in the Nurſeries near *London*, where their Heads were ſheer'd into a conical Figure. But ſince that low Taſte of Gardening, in crouding vaſt Quantities of clipp'd Plants into Gardens, is juſtly exploded, theſe Trees do not meet with ſo good Reception as formerly; but notwithſtanding this, there may be ſome of them planted in Gardens to great Advantage, if they are plac'd in Wilderneſſes, or Clumps of ever-green Trees, where theſe ſhould be planted with other Sorts which are nearly of the ſame Growth: and in ſuch Plantations, the dull heavy green Colour of theſe Leaves will be very uſeful in adding to the Luſtre of thoſe which are of a more lively Green, and make a fine Variety.

The ſtriped Sort is preſerv'd by the Curious in collecting ſuch Varieties; but has little Beauty.

The *China* Arbor Vitæ hath not been long in *Europe*: the Cones of this ſame Tree were ſent from *China* by ſome of the *French* Miſſionaries; and ſince this Sort has been introduc'd into the *Engliſh* Gardens, it has been greatly propagated by Layers and Cuttings; but the Seeds ſeldom ripen here.

The Leaves of this Tree are of a beautiful green Colour, and the Branches are well cloath'd with them; ſo that it makes a fine Appearance when intermix'd with other ever-green Trees. This Tree, although a Native of *China*, is extremely hardy, and will endure the greateſt Cold of this Country in the open Air; which renders it more valuable.

It will grow to the Height of twenty Feet, or upward, and is generally furniſh'd with Branches all the Length of the Stem; ſo that it deſerves to be rang'd in the firſt Claſs of ever-green Trees for Beauty.

Theſe Trees may be propagated by laying down their tender Branches in Autumn; obſerving to ſlit them at a Joint (as is commonly practis'd for Carnations), as alſo to water them in dry Weather, and keep them conſtantly clear from Weeds. If theſe Things be duly obſerv'd, the Layers will be rooted in two Years; by which time they may be taken off, and tranſplanted into a Nurſery in Rows three Feet aſunder, and the Plants eighteen Inches Diſtance in the Rows; obſerving to lay a little Mulch upon the Surface of the Ground about their Roots, to prevent the Wind from drying it; and in dry Weather they ſhould be often refreſh'd with Water, until they have taken Root; after which they muſt be conſtantly kept clear from Weeds, and the Ground dug every Spring between the Rows, that their Roots may extend themſelves on every Side. In this Nurſery they may remain five or ſix Years, and may then be tranſplanted where they are to remain for good. The beſt Seaſon to remove theſe Trees is about the End of *September*, or Beginning of *April*, juſt before they ſhoot.

Theſe Trees may alſo be propagated by Slips, which ſhould be planted on a moiſt Soil in Autumn; and if ſhaded in very hot dry Weather, moſt of them will take Root; after which they muſt be treated as hath been directed for the Layers.

The Leaves of the common Sort, being bruiſed between the Fingers, emit a ſtrong Scent, ſomewhat like Ointment; and I have been informed, that ſome Perſons make an Ointment thereof, which is eſteem'd excellent for freſh Wounds.

THYMBRA.

The *Characters* are:

It hath a labiated Flower, like thoſe of the Savory, Thyme, and Calamint; from which this Plant differs in having its Flowers growing in Whorles.

The *Species* are;

1. Thymbra *legitima. Cluſ. Hiſt.* The true Thymbra of *Cluſius*.

2. Thymbra *Hiſpanica, coridis folio. Inſt. R. H. Spaniſh* Thymbra, with a fair Heath-pine-leaf.

3. Thymbra *Sancti Juliani, ſive Satureia vera. Lob. Icon.* Thymbra of *Mount Saint Julian*, or the true Savory of *Lobel*.

The firſt Sort riſes about two Feet high, and hath a woody Stem, and divides into many Branches, ſo as to form a ſmall Buſh. The Leaves of this Plant are ſomewhat like thoſe of Savory, and have a ſtrong aromatic Scent when bruis'd. This Sort grows plentifully in ſeveral Iſlands of the *Archipelago*; from whence the Seeds were ſent to ſeveral curious Perſons, who cultivate it for the ſake of Variety. This Kind may be propagated by Cuttings, which ſhould be planted in the Beginning of *April*, on a Border, where they may have only the morning Sun; and in dry Weather they muſt be conſtantly water'd, until they have taken good Root; after which time, they will require no farther Care, but to keep them clear from Weeds till *Michaelmas*; at which time the Plants ſhould be carefully taken up, and tranſplanted; ſome of them into Pots, that they may be ſhelter'd in Winter; and the others on a dry lean Soil in a warm Situation, where they will endure the Cold of our ordinary Winters very well; but in ſevere Winters they are frequently deſtroyed: therefore it is proper to preſerve two or three Plants in Pots under Shelter, leſt thoſe in the open Air ſhould be kill'd.

The ſecond Sort was diſcover'd by Dr. *Tournefort* in *Caſtile*, where it grew plentifully on ſtony Ground. This is a low ever-green buſhy Plant ſomewhat like Thyme; but the Leaves are broader, and the whole Plant has a more dull and ſomewhat fetid Smell. This may be propagated by Seeds, or by Cuttings, as the former Sort; and ſhould be treated in the ſame manner.

The third Sort grows in ſeveral Places in *Italy* and *Sicily*, commonly on ſtony Land, or on old Walls: this is a low Plant, ſeldom riſing above ſix Inches high, ſending forth many upright Branches from the Root, which have Spikes of ſmall Flowers, growing in Whorles on their Tops. This Sort is propagated by Seeds, which ſhould be ſown on a light lean Soil; and when the Plants are ſtrong enough to tranſplant, ſome of them ſhould be planted in Pots to be ſhelter'd in Winter; and the others may remain where they were ſown, obſerving to keep them clear from Weeds, which is all the Culture they require. This Sort ſeldom continues longer than two or three Years; ſo that Seeds ſhould be ſown every other Seaſon to raiſe a Supply of young Plants.

Theſe Plants are ſuppos'd to have the ſame Virtues as Savory, to which they are nearly ally'd.

Moſt of the aromatic verticillate Plants will endure the Cold of the moſt ſevere Winters in *England*, provided they grow on rocky ſtony dry Ground, where they will be ſhort and ſtinted; and are alſo much ſtronger ſcented, than when they are ſown or planted on a richer Soil; nay, moſt of them will grow on old Walls and Buildings, where they will root into the Joints between the Stones or Bricks; and though they are expos'd to the ſevereſt Winds, yet will they reſiſt the Cold, when the Plants of the ſame Kinds, which are in the warmeſt Situations of the Garden, are intirely deſtroy'd. Of this there have been ſeveral Inſtances within the Memory of ſome Perſons now living; when all the Roſmary, and many other of the like aromatic Herbs, have been deſtroy'd in the Gardens; when ſome few Plants, which were growing on old Walls, have eſcap'd; whereby their Species have been preſerved in *England*.

THYMELÆA, Spurge-laurel, or Mezereon.

The *Characters* are;

The Flower conſiſts of one Leaf; is, for the moſt part, funnel-ſhap'd, and cut into four Segments; from whoſe Centre riſes the Pointal, which afterward becomes an oval Fruit, which is in ſome full of Juice, but in others is dry, in each of which is contain'd one oblong Seed.

The *Species* are;

1. THYMELÆA *laurifolia ſempervirens, ſeu laureola mas. Tourn.* The Spurge or Dwarf-laurel.

2. THYMELÆA *laurifolia ſempervirens, foliis variegatis.* The ſtriped Spurge-laurel.

3. THYMELÆA *lauri folio deciduo, ſive laureola fœmina. Tourn.* The common Mezereon.

4. THYMELÆA *lauri folio deciduo, flore albido, fructu flaveſcente. Tourn.* The Mezereon with white Flowers, and yellowiſh Fruit.

5. THYMELÆA *lauri folio deciduo, flore rubro.* The Mezereon with red Flowers.

6. THYMELÆA *lauri folio deciduo, foliis ex luteo variegatis.* The common Mezereon, with ſtriped Leaves.

7. THYMELÆA *foliis lini. C.B.P.* Spurge-olive, or Laurel with Flax-leaves.

8. THYMELÆA *Alpina latifolia humilior, flore purpureo odoratiſſimo. Inſt. R. H.* Dwarf Spurge-laurel of the *Alps*, with a Flax-leaf, and a very ſweet purple Flower.

9. THYMELÆA *Alpina latifolia humilior, flore albo odoratiſſimo. Inſt. R. H.* Dwarf Spurge-laurel of the *Alps*, with a Flax-leaf, and a very ſweet white Flower.

10. THYMELÆA *villoſa minor Luſitanica, polygoni folio. Inſt. R.H.* Smaller hairy *Portugal* Spurge-laurel, with a Knot-graſs-leaf.

11. THYMELÆA *linariæ folio, vulgaris. Inſt. R. H.* Common Spurge-laurel, with a Toad-flax-leaf.

12. THYMELÆA *linariæ folio, Hiſpanica. Inſt. R. H.* *Spaniſh* Spurge-laurel, with a Toad-flax-leaf.

13. THYMELÆA *latifolia Hiſpanica, oleæ foliis. Inſt. R. H.* Broad-leav'd *Spaniſh* Spurge laurel, with Olive-leaves.

14. THYMELÆA *argentea Italica, oleæ foliis. Inſt. R. H.* Silver *Italian* Spurge-laurel, with Olive-Leaves.

15. THYMELÆA *ſaxatilis, oleæ folio. Inſt. R. H.* Rocky Spurge-laurel, with an Olive-leaf.

16. THYMELÆA *Alpina, folio utrinque incano, flore albo. Inſt. R. H. Alpine* Spurge-laurel, with a Leaf hoary on both Sides, and a white Flower.

17. THYMELÆA *foliis polygalæ glabris. C. B. P.* Spurge-laurel with ſmooth Milkwort-leaves.

18. THYMELÆA *foliis polygalæ villoſis. Inſt. R. H.* Spurge-laurel with hairy Milkwort-leaves.

19. THYMELÆA *foliis chamelææ minoribus ſubbirſutis. C. B. P.* Spurge-laurel with ſmaller Widow-wail-leaves, which are ſomewhat hairy.

20. THYMELÆA *Hiſpanica, foliis myrti incanis. Inſt. R. H. Spaniſh* Spurge-laurel, with hoary Myrtle-leaves.

21. THYMELÆA *Pyrenaica juniperifolia, ramulis ſurrectis. Inſt. R. H. Pyrenean* Spurge laurel, with a Juniper-leaf, and upright Branches.

22. THYMELÆA *foliis candicantibus, ſerici inſtar mollibus. C. B. P.* Spurge-laurel with whitiſh ſoft Leaves reſembling Silk, commonly call'd *Tarton-raire.*

23. THYMELÆA *Cretica, oleæ folio ſubtus villoſo. Tourn. Cor.* Spurge-laurel of *Crete,* with an Olive-leaf hairy underneath.

24. THYMELÆA *Cretica, oleæ folio utrinque glabro. Tourn. Cor.* Spurge-laurel of *Crete,* with an Olive-leaf ſmooth on both Sides.

25. THYMELÆA *Pontica, citri foliis. Tourn. Cor. Pontic* Spurge-laurel, with Citron-leaves.

26. THYMELÆA *Orientalis minima, laureolæ folio, floribus glomeratis albis. Tourn. Cor.* The leaſt Eaſtern Spurge-olive, with the common Spurge-laurel-leaves, and white Flowers growing in Cluſters.

27. THYMELÆA *Orientalis, buxi folio ſubtus villoſo, flore albo. Tourn. Cor.* Eaſtern Spurge-laurel, with a Box-leaf hairy on the Under-ſide, and a white Flower.

28. THYMELÆA *Orientalis, ſalicis folio, flore albo odoratiſſimo. Tourn. Cor.* Eaſtern Spurge-laurel, with a Willow-leaf, and a white ſweet-ſcented Flower.

29. THYMELÆA *linifoliæ ſimilis, Africana, floribus pallidis odoratiſſimis. Prod. Par. Bat. African* Spurge-laurel like the ſeventh Sort, with pale ſweet-ſcented Flowers.

30. THYMELÆA *linifoliæ ſimilis, Africana, foliis lucidis, latioribus, & obtuſis. Par. Bat. African* Spurge-laurel, like the ſeventh Sort, with broader, ſhining, and obtuſe Leaves.

31. THYMELÆA *Africana, foliis lini, floribus in capitulum congeſtis. Oldenl. African* Spurge-laurel, with Flax-leaves, and Flowers collected in Heads.

32. THYMELÆA *Africana, roriſmarini folio anguſtiſſimo breviori. Oldenl. African* Spurge-laurel, with a very narrow and ſhorter Roſmary-leaf.

33. THYMELÆA *Africana, roriſmarini folio anguſtiſſimo longiori. Oldenl. African* Spurge-laurel, with a very narrow and longer Roſmary-leaf.

34. THYMELÆA *Africana, roriſmarini folio, floribus longioribus. Oldenl. African* Spurge-laurel, with a Roſmary-leaf, and longer Flowers.

35. THYMELÆA *Africana, ſanamundæ facie, ericæ foliis anguſtiſſimis. Prod. Par. Bat. African* Spurge-laurel, with the Face of Sanamunda, and very narrow Heath-leaves.

36. **Thymelæa** *Africana, tarton-raire ſimilis, floribus in capitulum congeſtis. Oldenl.* *African* Spurge-laurel, like the Tarton-raire, with Flowers collected in an Head.

37. **Thymelæa** *Africana, foliis ruſci. Oldenl.* *African* Spurge-laurel, with Butchers-broom-leaves.

38. **Thymelæa** *Africana fruteſcens, jaſmini flore, foliis polygalæ. Oldenl.* *African* ſhrubby Spurge-laurel, with a Jaſmine-flower, and Leaves of Milkwort.

39. **Thymelæa** *Capenſis, nepæ Theophraſti foliis aculeatis, flore parvo purpureo, Pluk. Phyt.* Spurge-laurel of the *Cape of Good Hope*, with prickly Furz-leaves, and a ſmall purple Flower.

40. **Thymelæa** *Americana fruteſcens, roriſmarini folio, flore albo. Plum.* Shrubby *American* Spurge-laurel, with a Roſmary-leaf, and a white Flower.

The firſt of theſe Plants is found wild in Woods, and other ſhady Places, in divers Parts of *England*; but is often cultivated in Gardens for Variety; where, if it is planted in Wilderneſſes, or ſhady Walks, it will thrive very well; and being an Ever-green, and producing its Flowers in Winter, when few other Plants flower, makes it more acceptable. The ſecond Sort is a Variety of the firſt, which is preſerv'd for the Beauty of its ſtriped Leaves.

Both theſe Plants may be propagated by Suckers taken from the old Plants, or by Layers; which ſhould be taken off in Autumn, and planted in a ſtrong Soil, and ſhady Situation; where, after they have taken Root, they will require little farther Care; but the plain Sort is as eaſily propagated by the Berries as the Mezereon.

The ſeveral Sorts of Mezereon are propagated by ſowing their Seeds; the beſt Seaſon for which is in *July*, ſoon after they are ripe, when they begin to fall from the Trees. Theſe ſhould be ſown upon an Eaſt Border, where they may have only the morning Sun, and cover'd about half an Inch with freſh Earth; in the Spring following ſome of the Plants will appear, when they muſt be carefully clear'd from Weeds, and in dry Weather ſhould be often water'd, which will greatly promote their Growth: but as the Seeds often lie in the Ground a whole Year before the Plants appear, the Ground ſhould not be diſturb'd till there is no Hope of more Plants coming up. In this Border they may remain two Years, by which time they will be ſtrong enough to tranſplant; when there ſhould be a Spot of freſh light Earth prepar'd for them, into which they ſhould be planted in Autumn, in Rows two Feet Diſtance, and the Plants eight Inches aſunder in the Rows, treating them afterwards in the uſual manner with other Kinds of Shrubs, while in this Nurſery; and when they are large enough to plant out for good, they may be taken up in Autumn, with a Ball of Earth to the Root of each Plant, and plac'd where they are to remain; which ſhould be in a light moiſt Soil, and a ſhady Situation, where they will thrive and flower extremely well.

There have been many of theſe Plants taken out of ſome Woods near *Andover* in *Hampſhire*; but how they came thither is not at preſent known; for this Shrub is not a Native of *England*.

Theſe Plants are great Ornaments to a Garden early in the Spring, before other Shrubs are in Flower; for, if the Seaſon is mild, they often flower in *January*; but in *February* they are always in Perfection. They ſeldom grow to be more than five or ſix Feet high in *England*; ſo ſhould be planted among other Shrubs of the ſame Growth.

The Sort with ſtrip'd Leaves may be propagated by budding or inarching it upon the plain Sort; becauſe the Seeds will not produce ſtriped Plants.

The ſixteen Sorts next-mention'd grow wild in *Germany*, *Bohemia*, *Auſtria*, on the *Alps* and *Apennines*, and ſome in the South of *France*, in *Spain*, and *Portugal*; but moſt of them are Strangers in *England*, where there are but few of the Plants to be found. Indeed, ſome of the Sorts are ſo difficult to tranſplant, that when they are remov'd from the Places of their natural Growth into the neighbouring Gardens, they will not thrive; particularly the eighth Sort, which is one of the moſt beautiful of the whole Tribe; the Flowers of this Sort being of a bright-purple Colour, and have a very fragrant Scent.

The twenty-ſecond Sort is now in ſeveral of the *Engliſh* Gardens; but the Plants make but little Progreſs as yet. This will live through the Winter in the open Air, provided it grows on a dry Soil, and in a ſhelter'd Situation; but it will be proper to keep a Plant or two in Pots, to be remov'd into Shelter in Winter, for fear thoſe in the open Air ſhould be deſtroy'd by ſevere Froſt.

Moſt of theſe Sorts may be propagated by Seeds, which muſt be ſown and treated in the ſame manner as hath been directed for the Mezereon; and the Seeds of theſe are apt to remain as long in the Ground: therefore the ſame Caution ſhould be us'd, not to diſturb the Earth where the Seeds are ſown, until there are no Hopes of more Plants coming up for ſome Seeds may grow the firſt Year, and others not till the ſecond or third Year.

The twenty-third, and the five next-following Sorts, were diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent their Seeds to the Royal Garden at *Paris*, where many of the Plants were rais'd; but moſt of the Kinds have been ſince loſt: ſo that at preſent there are few of them to be found in the Gardens of *Europe*; tho' they are hardy enough to live through the Winter in the open Air, if they are planted in a warm Situation.

Theſe Sorts may be propagated by Seeds, in the ſame manner as the former: but as they are difficult to procure, the beſt way will be to ſow the Seeds in Pots; which may be plac'd under a Frame in Winter, to ſhelter them from the Froſt; but they muſt be kept open in mild Weather, and in Summer the Pots may be remov'd into a ſhady Situation; which is more agreeable to the Seeds, than in a Place which is expoſed to the Sun. When the Plants are come up, they may be tranſplanted in the Autumn, either into Nurſery-beds, or into ſmall Pots; where they may grow a Year or two to get Strength, and afterward be tranſplanted where they are to remain.

Theſe Plants continue green throughout the Year, which renders them worthy of a Place in good Gardens; where, if they are rightly diſpos'd, they will afford an agreeable Variety. Moſt of theſe are low Shrubs, which ſeldom riſe above two or three Feet high; ſo are very proper to plant under Trees to fill up the Vacancies, where they will have a good Effect. The Seeds of the ſeventh Sort are uſed in Medicine, ſo that the Plants of this Kind are preſerv'd in Phyſic-gardens; but this makes the meaneſt Appearance of all the Sorts.

The twelve Sorts which are laſt-mention'd, are much tenderer than the former. All of theſe (except the laſt) grow near the *Cape of Good Hope*; from whence ſeveral of them have been brought into the *European* Gardens. Theſe Plants may alſo be propagated by Seeds; but as they very rarely produce their Seeds in *England*, they are commonly propagated by laying down their Branches; which, if rightly manag'd, will take Root in one Year. The beſt time to lay down the Branches is in the Beginning of *April*: the Branches which are choſen to make Layers, ſhould be of the former Year, or at moſt but two Years old: theſe ſhould be a little twiſted at the Part which is laid in the Ground, which will cauſe them to root the ſooner. In dry Weather they muſt be duly water'd, otherwiſe the Shoots will harden; which will prevent their putting out Roots. By the *April* following they will be rooted, when they may be cut off from the old Plants, and each planted into a ſmall Pot fill'd with freſh Earth; and if they are plung'd into a very moderate Hot-bed, it will forward their taking new Root. Theſe muſt be ſcreen'd from the Sun every Day till they are rooted; after which time they muſt be enured to bear the open Air by degrees; and in the Middle of *May* they ſhould be plac'd abroad in a ſhelter'd Situation, where they will make an agreeable Variety amongſt other Exotic Plants.

Theſe Plants muſt be remov'd into the Green houſe in Autumn, and plac'd where they may enjoy as much free Air as poſſible in mild Weather; but they muſt be protected from Froſt. During the Winter-ſeaſon they muſt be frequently refreſhed with Water; for they are pretty thirſty Plants; but in very cold Weather it muſt be given to them ſparingly. In Summer they muſt be plac'd abroad with Geraniums, Alaternoides's, and other Plants of the ſame Country, and treated in the ſame manner as hath been directed for thoſe; with which Management they will thrive very well. The Flowers of theſe Plants, being very ſmall, do not afford any great Pleaſure, but for the ſingular Oddneſs of the Leaves and Branches. Theſe Plants deſerve a Place in good Green-houſes, for Variety-ſake.

The laſt Sort is more tender than any of the reſt, as it is a Native of the warmer Parts of *America*. This was diſcover'd by Father *Plumier*, in ſome of the *French* Settlements in *America*; and hath been obſerv'd growing in great Plenty, at the *Havannah*, by the late Dr. *William Houſtoun*, who ſent the Seeds to *England*. It was alſo found by Mr. *Robert Millar* at *Campechy*, who alſo ſent the Seeds to *England*; from which many Plants have been raiſed.

The Seeds of this Plant ſhould be ſown in Pots of freſh Earth, and then plung'd into a moderate Hot-bed of Tanners Bark; obſerving frequently to water the Pots, to keep the Earth moiſt, which will bring up the Plants in about ſix Weeks time. When theſe Plants are about two Inches high, they ſhould be ſhaken out of the Seed-pots, and each planted in a ſmall Pot fill'd with freſh loamy Earth, and then plung'd into a moderate Hot-bed of Tanners Bark, where they muſt be ſhaded from the Heat of the Sun until they have taken new Root; after which time they muſt be treated in the ſame manner as hath been directed for other Exotic Plants, which are the Produce of the hotteſt Countries.

In this Hot-bed the Plants may remain till about *Michaelmas*, when the Nights will begin to be too cold for theſe Plants; therefore they ſhould be removed into the Stove, and plunged into the Bark-bed. During the Winter-ſeaſon theſe Plants muſt be kept very warm, eſpecially while they are young, becauſe they make but little Progreſs the firſt Year; and if they are ſtinted the firſt Winter, they do not recover in a long time after. Theſe Plants ſhould conſtantly remain in the Stove, and ſhould be treated in the ſame manner as hath been directed for the *Suriana*.

THYMUS, Thyme.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, whoſe Upper-lip is erect, and generally ſplit in two; and the Under-lip is divided into three Parts; out of the Flower-cup ariſes the Pointal, accompanied by four Embryoes, which afterward become ſo many Seeds incloſ'd in an Huſk, which was before the Flower-cup: to theſe Marks muſt be added, Hard ligneous Stalks, and the Flowers gathered into Heads.

The *Species* are;

1. THYMUS *vulgaris, folio latiore.* C. B. P. Common broad-leav'd Thyme.

2. THYMUS *vulgaris, folio tenuiore.* C. B. P. Common narrow-leav'd Thyme.

3. THYMUS *vulgaris, folio latiore variegato.* Broad-leav'd ſtriped Thyme.

4. THYMUS *capitatus, qui Dioſcoridis.* C. B. P. The true Thyme of the Antients.

There are ſeveral other Species of Thyme, which are preſerv'd in Botanic Gardens for Variety; but as they are ſeldom cultivated for Uſe, I ſhall not enumerate them in this Place. The Sort with broad Leaves is the moſt common in *England*: this is cultivated in the Kitchen-gardens as a Soup-herb, and alſo for medicinal Uſe. The next two Sorts are preſerv'd in many Gardens for Variety, being equally as good as the firſt for Uſe: but the fourth Sort is leſs common in *England* than either of the former.

Theſe Plants may be propagated either by Seeds, or parting their Roots; the Seaſon for either is in *March*. If it is done by ſowing the Seeds, they ſhould be ſown upon a Bed of light Earth, obſerving not to bury them too deep, which will cauſe them to rot: when the Plants are come up, they ſhould be carefully cleared from Weeds; and if the Spring ſhould prove dry, and they are watered twice a Week, it will greatly promote their Growth; and in *June* the Plants ſhould be thinn'd, leaving them about ſix Inches aſunder each Way, that they may have room to ſpread; and thoſe Plants which are drawn out may be tranſplanted into freſh Beds at the ſame Diſtance, obſerving to water them until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds; and in the Winter following they may be drawn up for Uſe.

But if the Plants are propagated by parting their Roots, the old Plants ſhould be taken up about the Latter-end of *March*, and ſlipt into as many Parts as can be taken off with the Root: theſe ſhould be tranſplanted into Beds of freſh light Earth, at ſix or eight Inches Diſtance; obſerving, if the Seaſon is dry, to water them until they have taken Root: after which they muſt be weeded, and they will thrive, and ſoon be fit for Uſe.

In order to ſave Seeds of theſe Plants, ſome of the old Roots ſhould remain unremoved in the Place where they were ſown the preceding

Year: theſe will flower in *June*, and in *July* the Seed will ripen, which muſt be taken as ſoon as it is ripe, and beat out, otherwiſe the firſt Rain will waſh it all out of the Huſks.

Theſe Plants root greatly in the Ground, and thereby draw out the Goodneſs of the Soil ſooner than moſt other Plants; ſo that whatever is ſown or planted upon a Spot of Ground, whereon Thyme grew the preceding Year, will ſeldom thrive, unleſs the Ground be trench'd deeper than the Thyme rooted.

THYME THE LEMON. *Vide* Serpyllum.

THYME THE MARUM. *Vide* Marum.

THYME THE MASTICH. *Vide* Maſtichina.

TILIA, The Lime, or Linden-tree.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are plac'd orbicularly, and expand in form of a Roſe; having a long narrow Leaf growing to the Footſtalk of each Cluſter of Flowers; from whoſe Cup riſes the Pointal, which afterward becomes a teſticulated Fruit, conſiſting of one Capſule, containing an oblong Seed in each.

The *Species* are;

1. Tilia *fœmina, folio majore. C. B. P.* The common or broad-leav'd Lime-tree.

2. Tilia *fœmina, folio minore. C. B. P.* The ſmall-leav'd Lime-tree.

3. Tilia *foliis molliter hirſutis, viminibus rubris, fructu tetragono. Raii Syn.* The red-twigg'd Lime-tree.

4. Tilia *Caroliniana, folio longius mucronato.* The *Carolina* Lime-tree.

5. Tilia *fœmina, folio majore variegato.* The ſtriped-leav'd Lime-tree.

6. Tilia *foliis majoribus mucronatis & rugoſioribus.* The *American* black Lime-tree.

The three firſt-mention'd Trees are very common in *England*, being cultivated in moſt Nurſeries; but the *Carolina* and *American* black Lime are not at preſent very common. The Seeds of the firſt were ſent from *Carolina* by Mr. *Mark Cateſby*, in the Year 1726; but as yet there does not appear any conſiderable Difference between this and the common Sort: the Seeds of the latter I receiv'd from *Virginia*. That with ſtriped Leaves is preſerv'd by ſome for the ſake of Variety; but there is no great Beauty in it.

The ſixth Sort has been lately introduced from *North-America* into the *Engliſh* Gardens: the Leaves of this Sort are much larger and rougher than either of the other, having ſomewhat the Appearance of thoſe of the Mulberry tree: the Shoots and Buds are of a dark Colour; from whence I ſuppoſe the Name of Black-lime was applied to it by the Inhabitants of *America*.

This Sort is as hardy as any of the other: but it is not ſo quick of Growth: the Shoots of one Year ſeldom exceed ſix Inches; tho' by the Appearance of the Stems, it ſeems as if it was a Tree of large Growth in its native Country.

All theſe Trees are eaſily propagated by Layers, which in one Year will take good Root, and may then be taken off, and planted in a Nurſery, at four Feet Diſtance Row from Row, and two Feet aſunder in the Rows: the beſt time to lay them down, and to remove them, is at *Michaelmas*, when their Leaves begin to fall, that they may take Root before the Froſt comes on, though they may be tranſplanted any time from *September* to *March*, in open

Weather; but if the Soil is dry, it is much the better way to remove them in Autumn, becauſe it will ſave a great Expence in watering them, eſpecially if the Spring ſhould prove dry. In this Nurſery they may remain four or five Years; during which time the Ground ſhould be dug every Spring, and conſtantly kept clear from Weeds; and the large Side-ſhoots pruned off, to cauſe them to advance in Height; but the ſmall Twigs muſt not be pruned off from the Stems; becauſe theſe are abſolutely neceſſary to detain the Sap, for the Augmentation of their Trunks, which are apt to ſhoot up too ſlender, when they are intirely diveſted of all their lateral Twigs. If the Soil in which they are planted be a fat Loam, they will make a prodigious Progreſs in their Growth; ſo that in five Years time they will be fit to tranſplant out where they are to remain.

Theſe Trees were ſome Years ſince greatly eſteemed for planting of Walks and Avenues near Habitations; becauſe in a few Years they would afford a pleaſant Shade, and might be removed, when grown to a large Stature, without Hazard; ſo that a Perſon might enjoy the Pleaſure of them in a ſhort time: but of late they are much leſs valued, on account of their Leaves decaying early in Autumn (eſpecially if the Soil be dry, in which they are planted); ſo that many times they are almoſt deſtitute of Leaves by the Beginning of *September*; whereas the Elm continues in Beauty a full Month longer; and the Wood of the latter being much preferable to that of the former, it has ſuperſed theſe Trees in moſt of the modern Plantations.

The Timber of the Lime-tree is uſed by the Carvers, it being a ſoft light Wood; as alſo by Architects for framing the Models of their Buildings; the Turners likewiſe uſe it for making light Bowls, Diſhes, &c. but it is too ſoft for any ſtrong Purpoſes.

Theſe Trees will continue ſound a great Number of Years; and, if planted in good loamy Soil, will grow to a conſiderable Bulk: I have meaſur'd one of theſe Trees, which was near ten Yards in Girt two Feet above the Ground, and was then in a very thriving Condition: and Sir *Thomas Brown* mentions one of theſe Trees which grew in *Norfolk*, that was ſixteen Yards in Circuit, a Foot and an half above-ground, in Height thirty Yards, and in the leaſt Part of the Trunk it was eight Yards and an half.

TINUS, Laurus Tinus, *vulgo.*

The *Characters* are;

The Flowers grow in Cluſters, and conſiſt of one Leaf, which is divided into five Parts toward the Top: theſe are ſucceeded by ſmall Fruit, ſhaped ſomewhat like an Olive; but are umbilicated, each containing one pear-ſhaped Seed.

The *Species* are;

1. TINUS *prior. Cluſ. Hiſt.* The Baſtard ſhining-leav'd Laurus Tinus, *vulgo.*

2. TINUS II. *Cluſ. Hiſt.* The rough-leav'd Laurus Tinus, *vulgo.*

3. TINUS III. *Cluſ. Hiſt.* The ſmall-leav'd Laurus Tinus, *vulgo.*

4. TINUS *prior Cluſii, folio atro-viridi ſplendente.* The ſhining-leav'd Laurus Tinus, *vulgo.*

5. TINUS *prior Cluſii, foliis ex albo variegatis.* The ſhining-leav'd Laurus Tinus.

6. TINUS II. *Cluſii, foliis ex luteo variegatis.* The ſtriped rough-leav'd Laurus Tinus.

7. TINUS *foliis ovatis in petiolos terminatis integerrimis. Flor. Virg.*

American Laurus Tinus, with oval whole Leaves.

Theſe Plants are greatly propagated in the Gardens near *London* for their Beauty, the Leaves always remaining green; and their Flowers are produc'd in great Plenty in the Winter-ſeaſon, when few other Shrubs flower.

Theſe Plants were a few Years ſince preſerved in Pots and Tubs, and plac'd in the Green-houſe in Winter, with Oranges, Myrtles, and other Exotic Trees; but of late Years they have been planted in the open Ground, where they reſiſt the Cold of our ordinary Winters very well, and are rarely injured, except in very ſevere Froſts; and then they are ſeldom deſtroyed, though their Heads may be kill'd, as was the Caſe with many of theſe Trees in the Years 1728. and 1740. yet thoſe which were left undiſturb'd ſhot out freſh again the following Summer, and have ſince made good Plants; which ſhould caution People from rooting out Plants too ſoon, when they may ſeem to be kill'd by Froſt.

Theſe Plants may be propagated by laying down their tender Shoots in Autumn, which, if kept clear from Weeds, and duly watered in dry Weather, will take Root by the ſucceeding Autumn, when they ſhould be taken off, and tranſplanted into a mellow loamy Soil, but not too wet, at three Feet Diſtance Row from Row, and eighteen Inches aſunder in the Rows, obſerving to lay ſome Mulch upon the Surface of the Ground about their Roots; and in dry Weather to refreſh them with Water until they have taken Root.

There ſhould alſo be ſome ſtrait Stakes fix'd down by the Side of each Plant (if they are deſign'd for Standards), to which they ſhould be faſtened, in order to render their Stems ſtrait, otherwiſe they will be crooked and unſightly: but it is not proper to have theſe Plants more than two Feet high in clear Stems; becauſe when their Heads are advanced above Sight, the Beauty of the Plants is loſt, and they are in great Danger of being deſtroy'd in bad Weather: therefore, when their Stems are two Feet high, their upright Shoots ſhould be ſtopp'd, in order to force out lateral Branches; which may be ſo pruned in the growing Seaſon, as to form them into regular Heads; but this ſhould not be done with Sheers (as is the common Practice, whereby their Leaves are cut, and render'd very unſightly), but rather ſkilfully pruned with a Knife, allowing their Branches a proportionable Diſtance to the Breadth of their Leaves, which will be cloſe enough to render them beautiful, and at the ſame time will encourage their Flowering: for when they are continually clipp'd, their Branches are very weak, and often decay in the Middle; and their Flowers are never ſo large, nor produc'd in ſo great Plenty, as when they have a greater Diſtance allow'd to their Shoots.

As the Flowers are produced at the Extremity of their Shoots, if they are clipp'd in the Summer, they will not produce Flowers the following Winter; therefore when the Shoots are pruned, it ſhould be done early in the Spring, before they make new Shoots; otherwiſe the great Beauty of the Plants will be loſt.

The ſecond and third Sorts are the beſt for this Climate, becauſe they are hardier, and will flower much better, than either of the other Kinds: theſe frequently begin to flower about *Michaelmas*; and if they are not injur'd by ſevere Froſt, will continue in Flower all the Winter

ter and Spring, when they make a very agreeable Appearance.

The fourth Sort is not quite ſo hardy, and is later in the Seaſon before it comes to flower; ſo that unleſs the Winter is favourable, or the Plants are ſhelter'd, they ſeldom produce many Flowers; but in very mild Winters, when the Plants are not injur'd, they make a fine Appearance; the Flowers of this Kind being much larger than thoſe of the other Kinds.

In this Nurſery the Plants may remain four or five Years; during which time they ſhould be carefully clear'd from Weeds, and the Ground dug every Spring; in doing of which their Roots ſhould be carefully cut round, to cauſe them to produce more Fibres, whereby they may be remov'd with greater Safety, becauſe the Earth will be the better ſupported by their Roots. The beſt time to tranſplant them is about the Beginning of *October*, as hath been directed for Laurels, and ſome other Sorts of Ever-greens, that being the Seaſon they begin to flower.

Theſe Shrubs are very ornamental, when planted in the lower Part of Clumps, and other Plantations of Ever-greens, if they are mix'd with other Plants of the ſame Growth: and in theſe Plantations they will not be ſo liable to ſuffer by Froſt, becauſe their Stems will be defended by the neighbouring Plants. They are alſo very proper to plant round the Verges of Woods, and tall Wilderneſſes, by way of Border to them; where if they are interſpers'd with Larels, and other Ever-greens, they add greatly to the Variety of ſuch Plantations, eſpecially in the Winter-ſeaſon, when the other Trees are deſtitute of Leaves: and in the Summer, when the other Trees are in full Leaf, the Green of theſe being of a darker Shade, make a good Contraſt with the others.

There are ſome who make Hedges of theſe Plants; but they are by no means proper for that Purpoſe, becauſe their Leaves are large, which occaſions their Branches to be produced at a farther Diſtance; and theſe, when cut, appear very unſightly; beſides, the Branches of theſe Trees are weak; ſo are not able to ſupport themſelves when they are cut pretty thin; ſo that the Winds and Snow frequently diſplace the Branches, and render theſe Hedges very unſightly: therefore I do not recommend them for this Purpoſe; but rather to have them grow in their natural way, without any Pruning, unleſs that of reducing irregular or miſplaced Shoots: theſe may be ſhortened, or intirely cut off, according as the Plants may require; and this one Pruning every Spring will be ſufficient to keep them conſtantly in Order, without injuring their flowering, which ſhould always be avoided.

The ſixth Sort has been lately introduced into the *Engliſh* Gardens from *North-America*, and hath not as yet produced any Flowers in this Country: the Seeds of this I received from the late Dr. *Thomas Dale* from *Carolina*: the Plants which I have raiſed are ſomewhat tender while young; but afterward thrive very well in the open Air: theſe have conſtantly retained their Leaves all the Year; but there have been ſome Plants brought from *Maryland* and *Virginia*, by the ſame Title, which caſt their Leaves in Winter, and appear to be much hardier than thoſe from *Carolina*; though there are ſome Perſons, who affirm they are the ſame, which at preſent ſeems very unlikely; however, when they have produced Flowers, their Difference may be better aſcertained.

TITHYMALUS, Spurge.

The ſeveral Kinds of Spurge having been ranged under the Title of *Euphorbia* by Dr. *Linnæus*, as they agree well together in their Flower and Fruit; and were ſeparated by former Botaniſts, for their outward Appearance only; therefore I have followed the Doctor in placing them together: but as there is an eſſential Difference between the Flowers of this Genus, and thoſe of *Euphorbia*, I have applied the old Name to this Genus, rather than that of *Tithymaloides*.

The *Characters* are;

The Flower conſiſts of one Leaf, and is in Shape ſomewhat like a Slipper; whoſe Pointal afterward becomes a tricapſular Fruit, like that of Euphorbia.

The *Species* are;

1. TITHYMALUS *fruteſcens, folio myrti ampliſſimo. Tourn.* The *American* ſhrubby laurel-leav'd Spurge, *vulgo*.

2. TITHYMALUS *fruteſcens, foliis nerii. Plum.* Shrubby Spurge, with an Oleander-leaf.

The ſecond Sort was brought from *Barbados*, into the *Engliſh* Gardens, by the Name of Poiſon-buſh; the milky Juice of the Plant, with which it greatly abounds, being very acrid, and will draw Bliſters on the Skin: if this Juice mixes with the Blood, it is ſaid to be of a deadly Nature; ſo that if the Points of Arrows, or the Edges of Swords, are rubbed over with this Juice, I have been informed, that whatever Animal is wounded with theſe, ſurely dies, though the Wounds are not deep, or in any dangerous Part.

The firſt Sort was ſent from *Campechy* by the late Mr. *Robert Millar*, a Surgeon: the Branches of this Sort are weaker than thoſe of the other, and grow much longer, ſo that they require to be ſupported: the Leaves are ſhort and broad, ending in a Point: theſe are not near ſo thick as thoſe of the former, and are of a lighter Green: the whole Plant abounds with a milky Juice of a ſharp acrid Quality; ſo I believe it to be equally poiſonous with the other; for if a Branch is cut off, the Juice will immediately corrode the Knife.

They are both propagated by Cuttings, which may be taken from the Plants during any of the Summer-months; and after having lain in a dry Place for a Fortnight or three Weeks, until the wounded Part be healed over, they ſhould be planted into ſmall Pots fill'd with light ſandy Earth mix'd with Lime-rubbiſh, and then plunged into an Hot-bed of Tanners Bark, obſerving now-and-then to refreſh them gently with Moiſture; but they ſhould never receive much Wet, which will rot them.

After they have taken Root, they may have a greater Share of Air by raiſing the Glaſſes; but they muſt never be expos'd to the open Air: in this Bed they may remain until the Beginning of *October*, when they muſt be remov'd into the Stove, and plac'd with the Melon and Torch-thiſtle, in a warm dry Stove; and, during the Winter-ſeaſon, they ſhould have very little Water, which, if given in Plenty, ſeldom fails to rot them.

Theſe Plants are too tender to thrive in the open Air in *England*; therefore the Plants ſhould conſtantly remain in the Stove, obſerving in the Summer-ſeaſon, when the Weather is warm, to admit a large Share of freſh Air to them, and in the

Winter to place them in a warm Part of the Stove, otherwiſe they cannot be preſerv'd.

Theſe Plants muſt be ſhifted every Summer, and freſh Earth given to them: if the Earth is light and ſandy, it will require no Mixture; for rich or ſtrong Ground is very improper for them; therefore where the Soil is inclinable to either of theſe, there ſhould be a good Mixture of Sand and Lime-rubbiſh, to prevent its binding, or detaining Moiſture.

Theſe Plants are preſerv'd for their odd Appearance amongſt other ſucculent Plants, their Leaves being very large, thick, and full of a milky acrid Juice.

TITHYMALUS. *Vide* Euphorbia.

TOAD-FLAX. *Vide* Linaria.

TOBACCO. *Vide* Nicotiana.

TORDYLIUM, Hartwort.

The *Characters* are;

It is an umbelliferous Plant, with a roſe-ſhap'd Flower, conſiſting of five unequal heart-faſhion'd Petals, which are placed circularly, and reſt on the Empalement, which afterward becomes an almoſt round Fruit, compoſed of two flat Seeds, which eaſily caſt off their Covering, with a raiſed Border, which is commonly indented.

The *Species* are;

1. TORDYLIUM *maximum. Inſt. R. H.* The greateſt Hartwort.
2. TORDYLIUM *Narbonenſe minus. Inſt. R. H.* Small Hartwort of *Narbonne*.
3. TORDYLIUM *Apulum minimum. Col. P.* 4. 124. The ſmalleſt Hartwort of *Apulia*.
4. TORDYLIUM *minus, limbo granulato, Syriacum. Mor. Umb.* Small Hartwort of *Syria*, with a granulated Border.
5. TORDYLIUM *folio longo anguſto, flore albo magno, ſemine elegantiſſime & profundiſſime crenato albo. Boerh. Ind. alt.* Hartwort with a long narrow Leaf, a large white Flower, and a white Seed beautifully and deeply notch'd.
6. TORDYLIUM *Orientale, Secacul Arabum dictum Rauwolfio. Boerh. Ind. alt.* Eaſtern Hartwort, call'd by *Rauwolf*, *Secacul* of the *Arabians*.
7. TORDYLIUM *Luſitanicum, cicutæ folio, ſemine ſtriato. Inſt. R. H.* *Portugal* Hartwort, with an Hemlock-leaf, and a ſtreak'd Seed.
8. TORDYLIUM *album, facie tordylii lutei Columnæ. Hort. Cath.* White Hartwort, with the Appearance of *Columna*'s yellow Hartwort.

All theſe are annual Plants, which periſh ſoon after they have perfected their Seeds. The firſt Sort is found wild in ſeveral Parts of *England*: and the ſecond Sort has been by ſome mention'd as an indigenous Plant of this Country; but I believe it is nowhere found wild, unleſs where the Seeds have been purpoſely ſcatter'd. Theſe Plants are preſerv'd in the Gardens of ſome Perſons who are curious in Botany; but there is little Beauty in them.

They are propagated by Seeds, which ſhould be ſown in the Autumn ſoon after they are ripe; when the Plants will ſoon appear, and are very hardy, ſo that they require no farther Care, but to keep them clear from Weeds; and where they come up too cloſe together, they ſhould be thinned ſo as to leave them ſix Inches aſunder. In *June* following the Plants will flower, and their Seeds will ripen in *Auguſt*; which, if permitted to ſcatter on the Ground, will produce a Supply of Plants without any Trouble. If the Seeds of theſe Plants are kept out of the Ground till Spring, they ſeldom ſucceed; for if any Plants are produced from the Seeds then ſown, they commonly periſh before they have perfected their Seeds; whereas thoſe which are ſown in Autumn do rarely fail. Theſe Plants will grow on any Soil or Situation, ſo may be put into any obſcure Part of the Garden.

TORMENTILLA, Tormentil.

The *Characters* are;

The Flower conſiſts of four Petals, which are placed orbicularly, and expand in form of a Roſe; out of whoſe one-leaved Empalement (divided into ſeveral Segments, and ſhaped like a Baſon) ariſes the Pointal, which afterward becomes an almoſt globular Fruit, in which many Seeds are gather'd into a ſort of little Head, covered with the Empalement: to which muſt be added, That there are commonly ſeven Leaves growing on the Top of the Footſtalk.

The *Species* are;

1. Tormentilla *ſylveſtris. C. B. P.* Wild Tormentil, or Septfoil.

2. Tormentilla *radice repente. Inſt. R. H.* Creeping-rooted Tormentil.

3. Tormentilla *Alpina vulgaris major. C. B. P.* Greater Tormentil of the *Alps*.

4. Tormentilla *Caſſubica major. Inſt. R. H.* Greater Tormentil, with deep cut Leaves.

5. Tormentilla *Caſſubica minor. Inſt. R. H.* Smaller Tormentil, with deep-cut Leaves.

The firſt Sort grows wild everywhere on dry Paſtures, and on Commons, in moſt Parts of *England.* The Roots of this Plant have been frequently uſed for Tanning of Leather, in Places where Oak-bark is very ſcarce. This Root is alſo much uſed in Medicine, and is accounted the beſt Aſtringent in the whole Vegetable Kingdom.

The ſecond Sort is found in ſome particular Places of *England* growing wild: the third Sort grows on the *Alps*; and the fourth and fifth Sorts grow in *Denmark*, *Sweden*, and ſome other Northern Countries; but are rarely preſerved, unleſs in ſome Botanic Gardens, for the ſake of Variety. It requires no Care to propagate theſe Plants, ſince, if their Seeds are ſown in almoſt any Soil or Situation, the Plants will come up and flouriſh without any other Care, but to prevent their being over-run with great Weeds.

TOXICODENDRON, Poiſon-tree, *vulgo*.

The *Characters* are;

The Flower conſiſts of five Leaves, which are placed orbicularly, and expand in form of a Roſe; out of whoſe Flower-cup riſes the Pointal, which afterward becomes a roundiſh, dry, and, for the moſt part, furrowed Fruit, in which is contained one compreſs'd Seed.

The *Species* are;

1. Toxicodendron *triphyllum glabrum. Tourn.* Three-leav'd ſmooth Poiſon-tree.

2. Toxicodendron *triphyllum, folio ſinuato pubeſcente. Tourn.* Three-leav'd Poiſon-tree, with a ſinuated hairy Leaf.

3. Toxicodendron *rectum, foliis minoribus glabris. Hort. Elth.* Upright Poiſon-tree, with ſmaller ſmooth Leaves.

4. Toxicodendron *rectum pentaphyllum glabrum, foliis latioribus.* Smooth five-leav'd upright Poiſon-tree, with broader Leaves.

5 Toxicodendron *amplexicaule, foliis minoribus glabris. Hort. Elth.* Climbing Poiſon-tree, with ſmaller ſmooth Leaves.

6 Toxicodendron *foliis alatis, fructu rhomboide. Hort. Elth.* Poiſon-tree with wing'd Leaves, and a Fruit ſhap'd like a Rhombus.

The two firſt Species were brought from *Virginia*, many Years ſince, where they grow in great Plenty, as it is probable they do in moſt other Northern Parts of *America*. The firſt Sort ſeldom advances in Height; but the Branches trail upon the Ground, and ſend forth Roots, by which they propagate in great Plenty.

The ſecond Sort will grow upright, and make a Shrub about four or five Feet high, but rarely exceeds that in this Country. This may be propagated by Layers, and is equally as hardy as the former.

The third Sort here mention'd grows erect to the Height of five or ſix Feet: the Leaves of this Kind are much ſmaller than thoſe of the common Poiſon-oak; but the Branches of this are flexible, ſo that it will never make a Shrub of any great Height or Strength.

The fourth Sort was found in *Maryland*, from whence the Seeds were ſent to *England*. This grows more upright than the former, and by the Appearance of the young Plants, ſeems to be a Shrub of much larger Growth.

The fifth Sort is a Native of *Virginia*, from whence I received the Seeds: this puts out Roots from the Branches, which faſten themſelves to the Stems of Trees, or the Joints of Walls, by which the Branches are ſupported.

The ſixth Sort is a low Shrub, ſeldom riſing more than five Feet high. All the Sorts of Toxicodendron differ in Sex, the Male never producing any Fruit, having ſmall herbaceous Flowers, without any Embryoes.

Theſe Plants are preſerv'd by the Curious in Botany, for the ſake of Variety; but as there is little Beauty in them, they are not much cultivated in *England*. The Wood of theſe Trees, when burnt, emits a noxious Fume, which will ſuffocate Animals when they are ſhut up in a Room where it is burnt: an Inſtance of this is mention'd in the *Philoſophical Tranſactions* by Dr. *William Sherard*, which was communicated to him in a Letter from *New-England* by Mr. *Moore*, in which he mentions ſome People who had cut ſome of this Wood for Fuel, which they were burning, and in a ſhort time they loſt the Uſe of their Limbs, and became ſtupid; ſo that if a Neighbour had not accidentally open'd the Door, and ſeen them in that Condition, it is generally believ'd they would ſoon have periſh'd. This ſhould caution People from making uſe of this Wood.

All theſe Sorts are hardy Plants, which will thrive in the open Air in this Country; but they love a moiſt Soil, and ſhould be planted under Trees in Wilderneſſes, where they will thrive very well, and endure the Cold better than where they have a more open Expoſure. They may be propagated by Seeds, or from Suckers, which ſome of the Sorts ſend forth in plenty, or by laying down the Branches of thoſe Sorts which do not put forth Suckers; which in one Seaſon will be ſufficiently rooted to tranſplant; when they ſhould be planted where they are deſign'd to remain. The beſt Time to remove theſe Shrubs is in *March*, becauſe then there will be no Danger of their ſuffering by Froſt.

When a Perſon is poiſoned by handling this Wood, in a few Hours he feels an itching Pain, which provokes a Scratching, which is follow'd by an Inflammation and Swelling. Sometimes a Perſon has had his Legs poiſon'd, which have run with Water.

ter. Some of the Inhabitants of *America* affirm, they can diſtinguiſh this Wood by the Touch in the Dark, from its extreme Coldneſs, which is like Ice: but what is mention'd of this poiſonous Quality, is applicable to the ſixth Sort here mention'd; which, by the Deſcription, agrees with this Species.

This Sort of Poiſon-tree is not only a Native of *America*, but grows plentifully on the Mountains in *Japan*, where it is called *Faſi No Ki*; and from this Tree they extract one Sort of their Varniſh or Lacca, which they uſe for japanning their Utenſils: but this is not their beſt Kind of Varniſh, that being made of the Juice of another Tree, which is alſo very poiſonous, and nearly allied to this; and from which ſome Writers think it differs only by Culture.

The Juice of this Tree is milky, when it iſſues out of the wounded Part; but ſoon after it is expoſed to the Air, it turns black, and has a very ſtrong fetid Scent, and is corrodeing: for I have obſerved, on cutting off a ſmall Branch from one of theſe Shrubs, that the Blade of the Knife has been changed black in a Moment's time, ſo far as the Juice had ſpread over it; which I could not get off without grinding the Knife.

As this Tree is very common in *Virginia*, *Carolina*, and *New-England*, it would be well worth the Inhabitants Trial, to make this Varniſh.

TRACHELIUM, Throatwort.

The *Characters* are;

It hath a funnel-ſhap'd Flower, compoſed of one Leaf, and cut into ſeveral Parts at the Top; whoſe Empalement afterward becomes a membraneous Fruit often triangular, and divided into three Cells, which are full of ſmall Seeds.

The *Species* are;

1. TRACHELIUM *azureum umbelliferum. Pon. Bald.* Blue umbelliferous Throatwort.

2. TRACHELIUM *umbelliferum violaceum, foliis laciniatis. Inſt. R. H.* Throatwort with violet-colour'd Flowers growing in Umbels, and jagged Leaves.

3. TRACHELIUM *villoſum, floribus confertim ex foliorum alis naſcentibus. Inſt. R. H.* Hairy Throatwort, with Flowers growing in Cluſters from the Wings of the Leaves.

4. TRACHELIUM *petræum, floribus in capitulum congeſtis. Inſt. R. H.* Rock Throatwort, with Flowers collected in Heads.

5. TRACHELIUM *minus Africanum, floribus violaceis, per caulem ſparſis. Inſt. R. H.* Smaller *African* Throatwort, with violet-colour'd Flowers growing thinly on the Stalks.

6. TRACHELIUM *Americanum, ſonchi folio, flore albo longiſſimo. Plum.* *American* Throatwort, with a Sow-thiſtle-leaf, and a very long white Flower.

The firſt Sort is preſerv'd in many curious Gardens for the Beauty of its Flowers, which continue a long time, and are ſucceeded by new Umbels on the Tops of the younger Shoots; ſo that the Plants continue in Beauty for ſome Months.

This Plant is ſuppoſed to be a Native of ſome of the Iſlands in the *Archipelago*, from whence it was firſt brought to *Italy*, and hath been ſince ſpread to many Parts of *Europe*. It is hardy in reſpect to Cold, provided it has a proper Situation, which ſhould be in the Crevices of old Walls, where it will abide the Cold very well. When thoſe Plants which grow on warm Borders are frequently deſtroyed, this Plant has propagated itſelf by Seeds, on the Walls of ſome Gardens, where it has been planted; and thoſe Plants which have grown on the Walls have continued, when thoſe which were in Pots, and preſerv'd with Care, have been intirely deſtroyed.

The ſecond Sort grows upon the Mountains of *Breſcia*, about the Mouths of Caves, between the hardeſt Rocks; ſo that it is very difficult to get out the Roots.

The third Sort grows on the Rocks in ſeveral Places in the *Levant*.

All theſe Sorts are propagated by Seeds, which ſhould be ſown ſoon after they are ripe; for when they are kept out of the Ground till the Spring, they ſeldom grow. Theſe Seeds ſhould be ſown in Pots fill'd with freſh undung'd Earth, and plac'd in a ſhady Situation till the Beginning of *October*, when they may be removed into a more open Expoſure; where they may have as much Sun as poſſible, but be ſheltered from cold Winds: when the Cold is ſevere, they ſhould be placed under an Hot-bed-frame, where they may enjoy as much free Air as poſſible in mild Weather; but they muſt be ſcreened from hard Froſts, otherwiſe they are frequently deſtroyed.

They may alſo be propagated by Off-ſets or Cuttings, which may be taken off in the Spring or Summer-months; and ſhould be planted in Pots fill'd with freſh undung'd Soil, and plac'd in a ſhady Situation until they have taken Root; when they may be removed into a ſhelter'd Part of the Garden; where, being mix'd with other hardy Exotic Plants, they will afford an agreeable Variety.

But as theſe Plants thrive better on old Walls, when by Accident they have ariſen there from Seeds, ſo their Seeds, when ripe, may be ſcatter'd on ſuch Walls as are old, or where there is Earth lodged ſufficient to receive the Seeds; where the Plants will reſiſt the Cold much better, and continue longer, than when ſown in the full Ground; and when a few of the Plants are eſtabliſh'd on the Walls, they will ſhed their Seeds, ſo that they will maintain themſelves without any farther Care. I have obſerv'd ſome Plants of the firſt Kind, which have grown from the Joints of a Wall, where there has not been the leaſt Earth to ſupport them; which have reſiſted the Cold, tho' they have been greatly expoſed to the Winds; ſo that theſe Plants are very proper to cover the Walls of Ruins, where they will have a very good Effect.

The fourth Sort grows on the Mountains in *Italy*, from between the Crevices of the Rocks; from whence it is difficult to get out the Roots. This may be treated in the ſame manner as the former Sorts, and will thrive better on Walls, than if ſown or planted in the Earth.

The fifth Sort is an annual Plant, which was brought from the *Cape of Good Hope* to *Holland*, where it has been preſerv'd in ſome of their curious Botanic Gardens. This Sort will ſucceed well, if the Seeds are permitted to ſcatter on the Pots of Earth which are near them, provided the Pots are plac'd in the Green-houſe; where the Plants will come up and flower early the following Summer, and will have time to perfect their Seeds; whereas, when the Seeds are ſown in the Spring, the Plants will not flower till *Auguſt*; ſo that, if the Autumn ſhould prove bad, they will not produce Seeds.

The ſixth Sort grows plentifully in *Jamaica*, and ſeveral other Places in the warm Parts of *America*, where it grows in moiſt Places by the Sides of Rivers. This may be propagated by Seeds, which ſhould be ſown early in the Spring on a moderate Hot-bed; and when the Plants are come up, they ſhould be tranſplanted on another Hot-bed, to bring them forward; and then they may be treated in the ſame manner as hath been directed for the tender Sorts of *Rapuntium*: with which Management this Plant will thrive, and produce its Flowers; and if the Seeds are permitted to ſcatter, or are ſown as ſoon as they are ripe, if the Pots are kept in the Stove, the Plants will come up, and flouriſh much better than thoſe ſown in the Spring.

TRAGACANTHA, Goats-thorn.

The *Characters* are;

It hath a papilionaceous Flower, out of whoſe Empalement ariſes the Pointal, which afterward becomes a bicapſular Pod fill'd with kidney-ſhap'd Seeds: to theſe Notes muſt be added, The Leaves grow by Pairs on a middle Rib, which always ends in a Thorn.

The *Species* are;

1. Tragacantha *Maſſilienſis. J. B.* Goats-thorn of *Marſeilles*.
2. Tragacantha *Cretica incana, flore parvo, lineis purpureis ſtriato. T. Cor.* Hoary Goats-thorn of *Crete*, with a ſmall Flower ſtriped with purple Lines.
3. Tragacantha *humilis Balearica, foliis parvis vix incanis, flore albo. Salvad.* Low *Balearic* Goats-thorn, with ſmall Leaves, and a white Flower.
4. Tragacantha *altera, Poterium forte Cluſio. J. B.* Another Goats-thorn, with Leaves falling off in the Winter.
5. Tragacantha *Alpina ſempervirens, floribus purpuraſcentibus. Inſt. R. H.* Ever-green *Alpine* Goats-thorn, with purpliſh Flowers.
6. Tragacantha *Cretica, foliis minimis incanis, flore majore albo. Tourn. Cor.* Goats-thorn of *Candy*, with very ſmall hoary Leaves, and a larger white Flower.
7. Tragacantha *Orientalis humillima, flore magno albo. Tourn. Cor.* A very low Eaſtern Goats-thorn, with a large white Flower.
8. Tragacantha *Orientalis humillima, barbæ Jovis folio. Tourn. Cor.* A very low Eaſtern Goats-thorn, with a Jupiter's-beard-leaf.
9. Tragacantha *Orientalis humillima, foliis anguſtiſſimis argenteis. Tourn. Cor.* A very low Eaſtern Goats-thorn, with very narrow ſilver Leaves.
10. Tragacantha *Orientalis humillima, ſe ſpargens, floribus ſpicatis. Tourn. Cor.* A very low ſpreading Eaſtern Goats-thorn, with Flowers growing in Spikes.
11. Tragacantha *Orientalis humillima incana, flore purpuraſcente. Tourn. Cor.* A very low hoary Eaſtern Goats-thorn, with a purpliſh Flower.
12. Tragacantha *Orientalis erectior, foliis viciæ glabris, & ramis tomentoſis. Tourn. Cor.* A more upright Eaſtern Goats-thorn, with ſmooth Vetch-leaves, and woolly Branches.
13. Tragacantha *Orientalis humilis, candidiſſima & tomentoſa, floribus in foliorum alis in capitulum denſum naſcentibus. Tourn. Cor.* A lower very white and woolly Eaſtern Goats-thorn, with Flowers growing in thick Heads, from the Wings of the Leaves.
14. Tragacantha *Orientalis humilis, floribus luteis denſe congeſtis in foliorum alis. Tourn. Cor.* A low Eaſtern Goats-thorn, with yellow Flowers thick-ſet in the Wings of the Leaves.
15. Tragacantha *humilior, luteis floribus. C. B. P.* A lower Goats-thorn, with yellow Flowers.

16. TRAGACANTHA *Orientalis, floribus luteis in capitulum longo pediculo donatum congeſtis. Tourn. Cor.* Eaſtern Goats-thorn, with yellow Flowers gathered into an Head on a long Footſtalk.

17. TRAGACANTHA *Orientalis veſicaria, floribus purpureis in capitulum longo pediculo donatum congeſtis. Tourn. Cor.* Bladder Eaſtern Goats-thorn, with purple Flowers gathered into an Head, and ſet on a long Footſtalk.

18. TRAGACANTHA *Orientalis latifolia, flore purpureo magno. Tourn. Cor.* Eaſtern Goats-thorn, with a large purple Flower.

19. TRAGACANTHA *Orientalis, foliis anguſtiſſimis, flore purpuraſcente. Tourn. Cor.* Eaſtern Goats-thorn, with very narrow Leaves, and purpliſh Flower.

20. TRAGACANTHA *Orientalis, foliis oleæ, humillima, floribus in capitulum congeſtis. Tourn. Cor.* A very low Eaſtern Goats-thorn, with oblong Leaves, and Flowers gather'd into an Head.

21. TRAGACANTHA *Orientalis, foliis oleæ, incanis & tomentoſis, caule ab imo ad ſummum florido. Tourn. Cor.* Eaſtern Goats-thorn, with hoary and woolly Olive-leaves, and Flowers growing from the Bottom to the Top of the Stalks.

22. TRAGACANTHA *Orientalis, foliis incanis, caule & ramulis tomentoſis. Tourn. Cor.* Eaſtern Goats-thorn, with hoary Leaves, and woolly Stalks and Branches.

23. TRAGACANTHA *foliis incanis minoribus, minuſque villoſis. Boerh. Ind. alt.* Goats-thorn with ſmaller hoary Leaves, which are leſs hairy.

Moſt of the Sorts here mention'd were diſcovered by Dr. *Tournefort* in the *Levant*; from whence he ſent the Seeds of ſeveral Kinds to the Royal Garden at *Paris*.

All theſe Sorts may be propagated by Seeds, which ſhould be ſown on a Bed of freſh Earth in *March*; and when the Plants come up, they ſhould be carefully kept clean from Weeds; which, if permitted to grow amongſt the Plants, would ſoon overbear and deſtroy them, while they are young. If the Seaſon ſhould prove very dry, it will be of great Service to water the Plants now-and-then; and when they are large enough to tranſplant, they ſhould be carefully taken up, and ſome of them planted in ſmall Pots fill'd with freſh Earth, placing them in the Shade until they have taken Root; after which time they may be removed into an open Situation, where they may remain till the Latter-end of *October*; when they ſhould be placed under a common Frame, where they may be ſhelter'd from ſevere Froſt, but may have free Air in mild Weather; when the Glaſſes ſhould not be put over them.

The Remainder of the Plants may be planted on a warm dry Border, where they muſt be ſhaded until they take Root; and if the Seaſon ſhould continue dry, they muſt be refreſh'd with Water, otherwiſe they will be in Danger; becauſe while they are ſo young, their Roots will not have eſtabliſh'd themſelves in the Ground, ſufficiently to nouriſh them, in great Droughts.

Thoſe Plants which are planted in Pots, may be preſerved for a Year or two under Frames in Winter, until they have obtained Strength, when they may be ſhaken out of the Pots, and planted in a lean dry Soil, and a warm Situation, where they will endure the Cold of our ordinary Winters very well; but as they are ſometimes deſtroyed by hard Winters, it will be proper to keep a Plant of each Kind in Pots, which may be ſhelter'd in Winter to preſerve the Species.

Theſe Plants may be propagated by Cuttings; for as they rarely produce Seeds in this Country, the latter Method is only uſed here. The beſt time for this Work is in *April*, juſt as the Plants begin to ſhoot; at which time the tender Branches of the Plants ſhould be taken off, and their lower Parts diveſted of the decay'd Leaves; then they ſhould be planted on a very moderate Hot-bed, which ſhould be cover'd with Mats, to ſcreen them from the great Heat of the Sun by Day, and the Cold by Night: theſe Cuttings ſhould be frequently water'd until they have taken Root; after which they may be expos'd to the open Air, obſerving always to keep them clear from Weeds; and in very dry Weather they muſt be refreſh'd with Water.

On this Bed they may remain until the following Spring, where, if the Winter ſhould be very ſevere, they may be cover'd with Mats, as before; and in *April* they may be tranſplanted out either into Pots fill'd with ſandy light Earth, or into warm Borders, where, if the Soil be dry, gravelly, and poor, they will endure the ſevereſt Cold of our Climate; but if they are planted in a very rich Soil, they often decay in Winter.

From the ſecond Sort, Monſieur *Tournefort* ſays, the Gum Adragant, or Dragon, is produc'd in *Crete*; of which he gives the following Relation in his Voyage to the *Levant*: "We had the Satisfaction "of fully obſerving the Gum Adragant on Mount *Ida*. I cannot "underſtand how *Bellonius* comes "to aſſert ſo poſitively, that there is "no ſuch thing in *Candia*: ſure he "had not read the firſt Chapter of "the ninth Book of *Theophraſtus*'s "Hiſtory of Plants! The little "bald Hillocks about the Sheepfolds "produce much of the *Tragacantha*, and that too a very good "Sort. *Bellonius*, and *Proſper* "*Alpinus*, were doubtleſs acquainted with it; tho' it is hardly poſſible, from their Deſcriptions, to "diſtinguiſh it from the other Kinds "they make mention of. This "Shrub ſpontaneouſly yields the "Gum Adragant toward the "End of *June*, and in the following Months; at which time, the "nutritious Juice of this Plant, "thicken'd by the Heat, burſts open "moſt of the Veſſels wherein it is "contained. It is not only gathered in the Heart of the Trunk and "Branches, but alſo in the Interſpaces of the Fibres, which are ſpread "in the Figure of a Circle like Rays "of the Sun: this Juice is coagulated into ſmall Threads, which, "paſſing thro' the Bark, iſſue out "by little and little, according as "they are protruded by the freſh "Supplies of Juice ariſing from the "Roots. This Subſtance, being "expos'd to the Air, grows hard, "and is form'd either into Lumps, "or ſlender Pieces, curl'd and winding in the Nature of Worms, "more or leſs long, according as "Matter offers. It ſeems as if the "Contraction of the Fibres of this "Plant contributes to the expreſſing "of the Gum. Theſe delicate Fibres, as fine as Flax, being uncover'd, and trodden by the Feet of "the Shepherds and Horſes, are by "the Heat ſhrivell'd up, and facilitate the Emanation of the extravaſated Juices."

But notwithſtanding what *Tournefort* has ſaid concerning the Gum *Adragant* being produc'd from that particular Species, many Authors are of Opinion, that it is taken from ſeveral other Species, but particularly that of *Marſeilles*, from whence that Gum is often brought into *England*.

At preſent theſe Plants are rarely preſerved, excepting by ſome Perſons who are curious in Botany: yet in large Gardens many of them deſerve a Place; where if they are planted on Hillocks, or the Slopes of dry Banks, they will have a very good Effect, eſpecially thoſe which retain their Leaves thro' the Year.

TRAGIA.

The *Characters* are;

It hath a funnel-ſhaped Flower, conſiſting of one Leaf, for the moſt part divided into three Segments; but theſe are barren; for the Embryoes are plac'd at a Diſtance on the ſame Plant, which afterward becomes a tricoccous Fruit, compos'd of three Cells, each containing one ſpherical Seed.

The *Species* are;

1. Tragia *alia ſcandens, urticæ folio. Plum. Nov. Gen.* Climbing Tragia, with a Nettle-leaf.

2. Tragia *ſcandens, longo betonicæ folio. Plum. Nov. Gen.* Climbing Tragia, with a long Betony-leaf.

Theſe Plants were diſcovered by Father *Plumier* in *America*, who conſtituted this Genus by this Name in Honour to *Hieronymus Bock*, a famous Botaniſt, who was commonly called *Tragus*.

The firſt Sort grows plentifully in the *Savannahs* in *Jamaica*, and the other warm Parts of *America*; where it twines round whatever Plants or Trees it grows near, and riſes ſeven or eight Feet high, having tough woody Stems. The Leaves are like thoſe of the common Nettle, and the whole Plant is cover'd with burning Spines, like thoſe of the Nettle; which renders it very unpleaſant to handle.

The ſecond Sort was found by the late Dr. *Houſtoun*, at *Campechy*, from whence he ſent the Seeds.

As theſe Plants are of no great Beauty, they are ſeldom preſerv'd in this Country, except in ſome Botanic Gardens, for the ſake of Variety. They are propagated by Seeds, which muſt be ſown on an Hot-bed early in the Spring; and muſt afterward be tranſplanted into Pots, and plunged into an Hot-bed of Tanners Bark, and treated in the ſame manner as the *Dioſcorea*; with which Management they will thrive very well.

TRAGOPOGON, Goats-beard.

The *Characters* are;

It is a Plant with a ſemifloſculous Flower, conſiſting of many Half-florets: theſe, with the Embryoes, are included in one common many-leav'd Flower-cup, which is not ſcaly, as in Scorzonera; *but the Segments are ſtretched out above the Florets: the Embryoes afterward become oblong Seeds incloſ'd in Covers or Coats; and have a thick Down like a Beard adhering to them.*

The *Species* are;

1. Tragopogon *pratenſe luteum minus. C. B. P.* Small meadow Goats-beard, with a yellow Flower, commonly call'd Go-to-bed-at-noon.

2. Tragopogon *purpureo-cæruleum, porri folio; quod Artifi vulgo. C. B. P.* Goats-beard with a Leaf like Leeks, and a purple-blue Flower, commonly call'd Salſaffy, or Saſſafy.

3. Tragopogon *alter, gramineo folio, ſuave-rubens. Col.* Another Goats-beard, with a graſſy Leaf, and ſoft-red Flowers.

4. Tragopogon *pratenſe luteum majus. C. B. P.* Greater yellow Goats-beard.

5. Tragopogon *purpureo-cæruleum crocifolium. C. B. P.* Blue Goats-beard, with a Saffron-leaf.

6. Tragopogon *hirſutum. C.B. P.* Hairy Goats-beard.

7. Tragopogon *folio oblongo ſinuato. C. B. P.* Goats-beard with an oblong ſinuated Leaf.

The firſt Sort here mention'd grows wild in moiſt Meadows in divers Parts of *England*; and in *May*, when the Stems begin to advance, they are by many People gather'd to boil, and are by ſome preferr'd to Aſparagus: but the Stems of this ſmall Sort, being very ſlender, are not near ſo valuable as thoſe of the large yellow Sort, or that with blue Flowers, commonly call'd Salſafy; therefore whoever is deſirous to cultivate theſe Plants in Gardens, for the ſake of their Shoots, ſhould always make choice of one of thoſe two Sorts; becauſe their Stems are not only larger, but they are much tenderer, and better for the Purpoſe of boiling.

The ſecond Sort was formerly more in Eſteem than at preſent; this was brought from *Italy*, and cultivated in Gardens for Kitchen-uſe, the Roots being by ſome People greatly valued: but of late there is but little cultivated for the Markets; tho' there are ſeveral Gentlemen who preſerve it in Gardens to ſupply their Tables.

The third, fourth, fifth, ſixth, and ſeventh Sorts are by ſome preſerv'd for the Variety of their Flowers.

Theſe Plants are propagated from Seeds, which ſhould be ſown in the Spring upon an open Spot of Ground, in Rows about nine or ten Inches diſtant; and when the Plants are come up, they ſhould be hoed out, leaving them about ſix Inches aſunder in the Rows: the Weeds ſhould alſo be carefully hoed down as they are produc'd, otherwiſe they will ſoon overbear the Plants, and ſpoil them. This is the only Culture they require; and if the Soil be light, and not too dry, they will make large Plants before Winter; at which time the Salſafy, whoſe Roots are eaten in Winter, will be fit for Uſe, and may be taken up any time after their Leaves are decay'd; but when they begin to ſhoot again, they will be ſticky, and not fit for Uſe; but many Perſons cultivate this Sort for the Shoots, which they boil and eat after the manner of Aſparagus; for this Sort, producing ſtrong Shoots, is more valuable than the yellow Sort.

The common yellow Sort, whoſe Shoots are ſold in the Market, will be fit for Uſe in *April* or *May*, according to the Forwardneſs of the Seaſon: the beſt time to cut them is, when their Stems are about four Inches long; for if they ſtand too long, they are never ſo tender as thoſe which are cut while young.

Some People, in cultivating theſe Plants, ſow their Seeds in Beds pretty cloſe; and when the Plants come up, they tranſplant them out in Rows at the before-mention'd Diſtance; but as they always form a Tap-root, which abounds with a milky Juice, ſo when the extreme Part of their Roots is broken by tranſplanting, they ſeldom thrive well afterward; therefore it is by far the better way to make ſhallow Drills in the Ground, and ſcatter the Seeds therein, as before directed, whereby the Rows will be at a due Diſtance; and there will be nothing more to do than to hoe out the Plants where they are too thick in the Rows, which will be much leſs

Trouble than the other Method of tranſplanting, and the Plants will be much larger and fairer.

TRAGOSELINUM, Burnet-ſaxifrage.

The *Characters* are;

It hath an umbellated roſe-ſhaped Flower, compoſed of five unequal heart-ſhaped Petals, which are plac'd circularly, and reſt on the Empalement; which afterward becomes a Fruit, compos'd of two oblong ſtreaked Seeds.

The *Species* are;

1. Tragoselinum *majus, umbella candida. Inſt. R. H.* Greater Burnet-ſaxifrage, with a white Umbel.

2. Tragoselinum *majus, umbella rubente. Inſt. R. H.* Greater Burnet-ſaxifrage, with a red Umbel.

3. Tragoselinum *alterum minus. Inſt. R. H.* Leſſer round-leav'd Burnet-ſaxifrage.

4. Tragoselinum *minus. Inſt. R. H.* Small Burnet-ſaxifrage.

5. Tragoselinum *radice nigra, Germanicum. Juſſieu. German* Burnet-ſaxifrage, with a black Root.

6. Tragoselinum *Auſtriacum, foliis profundiſſime inciſis. Boerh. Auſtrian* Burnet-ſaxifrage, with Leaves very deeply cut.

7. Tragoselinum *Creticum maximum villoſum, flore albo. Tourn. Cor.* The greateſt hairy Burnet-ſaxifrage of *Crete*, with a white Flower.

8. Tragoselinum *minus ſaxatile fœtidiſſimum, apii folio. Tourn. Cor.* The leaſt ſtinking rock Burnet-ſaxifrage, with a Smallage-leaf.

9. Tragoselinum *Orientale laciniatum, umbella purpuraſcente. Tourn. Cor.* Eaſtern Burnet-ſaxifrage, with cut Leaves, and a purpliſh Umbel.

10. Tragoselinum *Orientale laciniatum, umbella alba. Tourn. Cor.* Eaſtern cut leav'd Burnet-ſaxifrage, with a white Umbel.

The firſt Sort is directed by the College of Phyſicians to be uſed in Medicine; but many times the Herb-women in the Markets impoſe on ignorant Perſons two Herbs for this one; *viz.* Burnet and Meadow-ſaxifrage; which they ſell for Burnet-ſaxifrage, which are two very different Plants, and of contrary Qualities. This Sort grows wild on the dry ſhady Banks in *Kent*, and in ſeveral other Parts of *England*.

The ſecond Sort is a Variety of the firſt, from which it only differs in the Colour of the Flowers, which in this Sort are red, and in the other white.

The third Sort grows wild in ſome Parts of *England*; but is not ſo common as the fourth, which is the moſt common Sort in the Fields near *London*. This fourth Sort is ſometimes brought to the Markets and may be uſed inſtead of the firſt; tho' it is much better to have the particular Sort ordered by the College, when it can be procured.

All the other Sorts are Strangers in this Country; but are often preſerv'd by the curious Botaniſts in their Gardens for Variety; and are all of them as hardy as the common Sorts.

Theſe Plants are propagated by Seeds, which ſhould be ſown on a ſhady Border of freſh Earth at *Michaelmas*; for if they are ſown in the Spring, they frequently miſcarry, or remain a Year in the Ground, as do many of the umbelliferous Plants. In the Spring following the Plants will appear, when they ſhould be carefully clear'd from Weeds; and as the Plants obtain Strength, they ſhould be thinn'd where they grow too cloſe, leaving them five or ſix Inches apart. After this they will require no other Culture, but to keep them clear from Weeds. The ſecond Summer theſe Plants will flower, and produce Seeds; but if the Roots are not diſturbed, they will continue ſeveral Years, and produce Seeds annually: therefore, where the Plants are deſign'd to remain, the Seeds ſhould be ſown in Drills, at about ſixteen Inches apart; which will allow room to dig the Ground between the Rows every Winter; whereby the Roots will be greatly encourag'd, and the Weeds will be better deſtroyed.

TRANSPLANTING OF TREES. *Vide* Planting.

TRIBULUS, Caltrops.

The *Characters* are;

It hath a Flower compoſed of ſeveral Leaves, which are plac'd circularly, and expand in form of a Roſe; out of whoſe Empalement riſes the Pointal, which afterward becomes a turbinated Fruit, compos'd of ſeveral Parts, which have Thorns, collected into an Head; and having ſeveral Cells, in which are inclos'd oblong Seeds.

The *Species* are;

1. TRIBULUS *terreſtris, ciceris folio, fructu aculeato. C. B. P.* Land-caltrop, with a Chich-leaf, and a prickly Fruit.

2. TRIBULUS *terreſtris major Curaſſavicus. Prod. Par. Bat.* Greater Land *American* Caltrops.

3. TRIBULUS *terreſtris Americanus, fructu turbinato, foliis lanuginoſis. Plum. Cat. American* Land-caltrops, with a turbinated Fruit, and downy Leaves.

4. TRIBULUS *terreſtris Indiæ Orientalis, foliis viciæ ſubrotundis & villoſis. Inſt. R. H. Eaſt-India* Land-caltrops, with roundiſh and hairy Vetch-leaves.

The firſt Sort is a very common Weed in the South of *France*, in *Spain* and *Italy*, where it grows among Corn, and on moſt of the arable Land, and is very troubleſome to the Feet of Cattle; for the Fruit, being armed with ſtrong Prickles, run into the Feet of the Cattle, which walk over the Land. This is certainly the Plant which is mention'd in *Virgil's Georgics*, under the Name of *Tribulus*; tho' moſt of his Commentators have applied it to other Plants.

It is call'd in *Engliſh*, Caltrops, from the Form of the Fruit, which reſembles thoſe Inſtruments of War that were caſt in the Enemies Way to annoy their Horſes.

This Plant is preſerv'd in ſeveral curious Gardens in *England*, for the ſake of Variety. It is propagated by Seeds, which ſhould be ſown in Autumn; for thoſe which are kept out of the Ground till Spring, commonly remain in the Ground a whole Year, before the Plants come up. Theſe Seeds ſhould be ſown on an open Bed of freſh light Earth, where they are deſign'd to remain; for, as it is an annual Plant, it doth not bear tranſplanting very well, unleſs it be done when the Plants are very young. In the Spring, when the Plants come up, they ſhould be carefully clear'd from Weeds; and where they come up too cloſe, ſome of the Plants ſhould be pulled out, to give room for the remaining Plants to grow. After this they will require no other Culture, but to keep them clear from Weeds. In *June* they will begin to flower, and their Seeds will ripen in *Auguſt* and *September*; which if permitted to ſcatter, the Plants will come up the following Spring, and maintain their Place, if they are not overborne with larger Weeds.

The Branches of this Plant trail on the Ground; and when the Plants are vigorous, will ſpread to a great

Diſtance from the Root; the Flowers come out on long Footſtalks from the Diviſion of the Branches, which are ſucceeded by the Fruit. Theſe, when they are ripe, divide into ſeveral Parts; ſo that, if they are not gather'd, they will ſoon drop off.

The other three Sorts, being Natives of hot Countries, are very tender; ſo muſt be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they muſt be each tranſplanted into a ſeparate Pot fill'd with rich light Earth, and then plung'd into an Hot-bed of Tanners Bark, where they muſt be treated in the ſame manner as other tender Exotic Plants; being careful to bring them forward as early as poſſible in the Summer; otherwiſe they will not perfect their Seeds in this Country.

Theſe are all of them annual Plants, whoſe Branches trail on the Ground, in the ſame manner as the common Sort; but when their Roots are pretty much confin'd in the Pots, they will not grow ſo vigorous as when planted in the full Ground, or in very large Pots; ſo will flower and fruit much earlier in the Seaſon. The ſecond Sort produceth large Flowers, which have an agreeable Scent.

TRICHOMANES, Maiden-hair.

There are three or four Varieties of this Plant, which grow in *Europe*; but in *America* there are a great Number of Species, which are remarkably different from each other, as alſo from the *European* Kinds.

Theſe, being of the Tribe of Ferns, are ſeldom preſerv'd in Gardens, but where any Perſon is curious to collect them. Their Roots ſhould be planted in moiſt ſhady Places, eſpecially the *European* Sorts, which commonly grow from between the Joints of old Walls, about Wells, and in other very moiſt ſhady Situations: but thoſe Sorts which are brought from hot Countries, muſt be planted in Pots fill'd with Rubbiſh, and ſtrong Earth mix'd; and in Winter they muſt be ſcreen'd from hard Froſts; to which if they are expos'd, it will deſtroy them.

The common Sort in *England* is generally ſold in the Markets for the true Maiden-hair, which is a very different Plant, and not to be found in *England*, it being a Native of the South of *France*, and other warm Countries; ſo is rarely brought to *England*.

TRIFOLIUM, Trefoil.

The *Characters* are;

It hath a papilionaceous Flower, or reſembles a papilionaceous Flower; for it conſiſts of the Standard; the Wings and the Keel coming out of the Empalement, together with the Pointal, covered with its fringed Sheath; which becomes a Capſule hidden in the Empalement, and full of Seeds, which are, for the moſt part, ſhaped like a Kidney, adhering cloſe to the Capſule when ripe: ſome of this Genus have Flowers conſiſting of one Leaf, reſembling a papilionaceous Flower; out of whoſe Empalement ariſes the Pointal, which afterward becomes a membranaceous Capſule hidden in the Empalement, and filled with kidney-ſhaped Seeds: to theſe Notes muſt be added, Leaves growing by Threes, on a common Footſtalk.

The *Species* are;

1. TRIFOLIUM *purpureum majus ſativum, pratenſi ſimile. Raii Syn.* Greater purple manur'd Trefoil, commonly call'd Clover.
2. TRIFOLIUM *pratenſe purpureum vulgare. Mor. Hiſt.* Common meadow Trefoil, with a purple Flower, commonly call'd Honeyſuckle Trefoil.
3. TRIFOLIUM *pratenſe album.*

C. B. P. White meadow Trefoil, or *Dutch* Clover.

4. TRIFOLIUM *arvenſe humile ſpicatum, ſive Lagopus. C. B. P.* Hares-foot Trefoil.

5. TRIFOLIUM *fragiferum. Ger. Emac.* Strawberry Trefoil.

6. TRIFOLIUM *pratenſe luteum, capitulo lupuli, vel agrarium. C.B.P.* Hop-trefoil.

7. TRIFOLIUM *purpureum majus, foliis longioribus & anguſtioribus, floribus ſaturatioribus. Raii Syn.* The greater purple Trefoil, with longer and narrower Leaves, and deeper-colour'd Flowers.

8. TRIFOLIUM *pratenſe folliculatum. C. B. P.* Bladder Meadow-trefoil.

9. TRIFOLIUM *luteum lupulinum minimum. Mor. Hiſt.* The leaſt yellow Hop-trefoil.

10. TRIFOLIUM *montanum, ſpica longiſſima rubente. C. B. P.* Mountain-trefoil, with a very long rediſh Spike.

11. TRIFOLIUM *montanum anguſtiſſimum ſpicatum. C. B. P.* Narrow-leav'd ſpiked Trefoil.

12. TRIFOLIUM *ſtellatum. C.B.P.* Rough ſtarry-headed Trefoil.

13. TRIFOLIUM *lagopoides hirſutum anguſtifolium Hiſpanicum, flore ruberrimo. Mor. Hiſt.* Hairy narrow leav'd Hares-foot *Spaniſh* Trefoil, with a very red Flower.

14. TRIFOLIUM *Ægyptiacum, floribus albicantibus, foliis oblongis, vulgo* Berſain. *Juſſieu. Egyptian* Trefoil, with whitiſh Flowers, and oblong Leaves, commonly call'd Berſain.

15. TRIFOLIUM *Creticum bituminoſo ſimile, plane inodorum, flore purpureo. Tourn. Cor.* Trefoil of *Candy*, reſembling the bituminous one, but without Smell, with a purple Flower.

16. TRIFOLIUM *Creticum elegantiſſimum, magno flore. Tourn. Cor.* The moſt beautiful Trefoil of *Candy*, with a large Flower.

17. TRIFOLIUM *ampliſſimum, folio ſubrotundo villoſo, flore purpuraſcente. Tourn. Cor.* Trefoil with a very large roundiſh hairy Leaf, and a purpliſh Flower.

18. TRIFOLIUM *Orientale altiſſimum, caule fiſtuloſo, flore albo. Tourn. Cor.* The talleſt Eaſtern Trefoil, with an hollow Stalk, and a white Flower.

19. TRIFOLIUM *Orientale majus villoſiſſimum, floribus flaveſcentibus. Tourn. Cor.* The greater and more hairy Eaſtern Trefoil, with yellowiſh Flowers.

20. TRIFOLIUM *clypeatum argenteum. Alp. Exot.* Silvery target-ſhaped Trefoil.

21. TRIFOLIUM *Apulum annuum, calyce veſicario. Hort. Piſſ.* Annual Trefoil of *Apulia*, with a bladder Empalement.

22. TRIFOLIUM *pratenſe hirſutum majus, flore albo ſulphureo ſeu ochroleuco Raii Syn.* Greater hairy Meadow-trefoil, with a whitiſh-yellow Flower; commonly known in ſome Counties by the ſimple Name of *Trefoil*.

23. TRIFOLIUM *bitumen redolens. C. B. P.* Trefoil ſmelling of Bitumen.

24. TRIFOLIUM *bitumen redolens anguſtifolium ac ſempervirens. Boerh. Ind.* Narrow-leav'd Trefoil ſmelling of Bitumen.

25. TRIFOLIUM *Africanum fruticans, flore purpuraſcente. H. Amſt. African* ſhrubby Trefoil, with a purpliſh Flower.

The firſt of theſe Plants is greatly cultivated in *England* for feeding of Cattle; and is eſteem'd very profitable, becauſe the great Quantity of Cattle which this Graſs will maintain, does very much enrich all clayey Lands, and prepare them for Corn in two or three Years, which is the Length of Time which this Crop will continue good.

In the Choice of this Seed, that which is of a bright-yellowiſh Colour, a little inclining to brown, ſhould be preferr'd; but the Black rejected as good for little.

Ten Pounds of this Seed will be ſufficient for an Acre of Ground; for if the Plants do not come up pretty thick, it will not be worth ſtanding. The Land in which this Seed is ſown ſhould be well plowed, and harrow'd very fine; otherwiſe the Seeds will be buried too deep, and thereby loſt.

The beſt time to ſow it is about the Beginning of *Auguſt*, at which Seaſon the autumnal Rains will bring up the Plants in a ſhort time; whereas when the Seeds are ſown in the Spring, if it be done very early, they are many times burſt with Wet and Cold; and if it be done late, they are in Danger of miſcarrying from Drought; whereas in Autumn, when the Ground has been warm'd by the Summer's Heat, the Rains then falling do greatly promote the Vegetation of Seeds and Plants.

This Seed ſhould be harrow'd in with Buſhes; for if it be done with a common Harrow, they will be bury'd too deep.

Moſt People have recommended the ſowing of this Seed with ſeveral Sorts of Corn; but if it be ſown at the Seaſon before directed, it will be much better, if ſown alone; for the Corn prevents the Growth of the Plants until it is reaped, and taken off the Ground; ſo that one whole Seaſon is loſt; and many times, if there be a great Crop of Corn upon the Ground, it ſpoils the Clover; ſo that it is hardly worth ſtanding; whereas, in the Way before directed, the Plants will have good Root before Winter; and in the Spring will come on much faſter than that which was ſown the Spring before under Corn.

About the Middle of *May* this Graſs will be fit to cut; when there ſhould be great Care taken in makeing it; for it will require a great deal more Labour and Time to dry than common Graſs, and will ſhrink into leſs Compaſs; but if it be not too rank, it will make extraordinary rich Food for Cattle. The time for cutting it is when it begins to flower; for if it ſtands much longer, the lower Part of the Stems will begin to dry, whereby it will make a leſs Quantity of Hay, and that not ſo well flavour'd.

Some People cut three Crops in one Year of this Graſs; but the beſt Way is, to cut but one in the Spring, and feed it the remaining Part of the Year; whereby the Land will be enrich'd, and the Plants will grow much ſtronger.

One Acre of this Graſs will feed as many Cattle as four or five Acres of common Graſs: but great Care ſhould be taken of the Cattle when they are firſt put into it, leſt it burſt them. To prevent which, ſome turn them in for a few Hours only at firſt, and ſo ſtint them as to Quantity; and this by degrees, letting them at firſt be only one Hour in the Middle of the Day, when there is no Moiſture upon the Graſs, and ſo every Day ſuffer them to remain a longer time, until they are fully ſeaſon'd to it: but great Care ſhould be had never to turn them in to this Food in wet Weather; or if they have been for ſome time accuſtom'd to this Food, it will be proper to turn them out at Night in wet Weather, and let them have Hay, which will prevent the ill Conſequences of this Food: but there are ſome who give Straw to their Cattle while they are feeding upon this Graſs, to prevent the ill Effects of it; which muſt not be given them in the Field, becauſe they will not eat it where there is Plenty of better Food. There are others who ſow Rye-graſs amongſt their Clover, which they let grow together, in order to prevent the ill Conſequences of the Cattle feeding wholly on Clover: but this is not a commendable Way, becauſe the Rye-graſs will greatly injure the Clover in its Growth.

Where the Seeds are deſign'd to be ſav'd, the firſt Crop in the Spring ſhould be permitted to ſtand until the Seeds are ripe, which may be known by the Stalks and Heads changing to a brown Colour; then it ſhould be cut in a dry time: and when it is well dry'd, it may be hous'd until Winter, when the Seed ſhould be threſh'd out; but if the Seeds are wanted for immediate ſowing, it may be threſh'd out before it be hous'd or ſtack'd; but then it muſt be well dry'd, otherwiſe the Seeds will not quit their Huſks.

It has been a great Complaint amongſt the Farmers, that they could not threſh out theſe Seeds without great Labour and Difficulty; which I take to be chiefly owing to their cutting the Spring Crop when it begins to flower, and to leave the ſecond Crop for Seed, which ripens ſo late in Autumn, that there is not Heat enough to dry the Huſks ſufficiently; whereby they are tough, and the Seeds render'd difficult to get out; which may be intirely remedied by the leaving of the firſt Crop for Seed, as hath been directed.

When Cattle are fed with this Hay, the beſt Way is, to put it in Racks, otherwiſe they will tread a great Quantity of it down with their Feet.

This Feed is much better for moſt other Cattle than Milch Cows, ſo that theſe ſhould rarely have any of it, leſt it prove hurtful to them: tho' when it is dry, it is not near ſo injurious to any ſort of Cattle as when green.

The ſecond and third Sorts grow wild in Meadows amongſt the Graſs, where their Roots will abide many Years, and are cut with the Graſs, and dry'd for Food: but the third Sort is cultivated in divers Parts of *England*; and is one of the beſt Graſſes to make a fine Sward yet known. This is commonly call'd White *Dutch* Clover.

This is an abiding Plant, whoſe Branches trail upon the Ground, and ſend out Roots from every Joint; ſo that it makes the cloſeſt Sward of any of the ſown Graſſes; and it is the ſweeteſt Feed for all Sorts of Cattle yet known: therefore when Land is deſign'd to be laid down for Paſture, with Intent to continue ſo, there ſhould always be a Quantity of the Seeds of this Plant ſown with the Graſs-ſeeds: the uſual Allowance of this Seed is eight Pounds to one Acre of Land: but this ſhould never be ſown with Corn; for if there is a Crop of Corn, the Graſs will be ſo weak under it, as to be ſcarce worth ſtanding: but ſuch is the Covetouſneſs of moſt Farmers, that they will not be prevailed on to alter their old Cuſtom of laying down their Grounds with a Crop of Corn, though they loſe twice the Value of their Corn by the Poorneſs of the Graſs, which never will come to a good Sward, and one whole Seaſon is alſo loſt; for if this Seed is ſown in the Spring, there will be a

Crop of Hay to mow by the Middle or Latter-end of *July*, and a much better After-feed for Cattle the following Autumn and Winter, than the Graſs which is ſown with Corn will produce the ſecond Year. The Seed of this Sort may alſo be ſown with Graſs-ſeeds in Autumn, in the manner before directed for the common red Clover: and this autumnal Sowing, if the Seeds grow kindly, will afford a good early Crop of Hay the following Spring; and if, after the Hay is taken off the Land, the Ground is well rolled, it will cauſe the Clover to mat cloſe upon the Ground, and become a thick Sward.

The Seeds of this White *Dutch* Clover is annually imported from *Flanders*, by the Way of *Holland*; from whence it received the Name of *Dutch* Clover; not that it is more a Native of that Country than of *England*; for it is very common in moiſt Paſtures in every County in *England*; but the Seeds were never collected for ſowing here till of late Years; nor are there many Perſons at preſent here, who ſave this Seed, altho' it may be done with the ſame Care as is practiſed for the Red Clover; therefore it ſhould be recommended to every Farmer, who is deſirous to improve his Land, carefully to keep an Acre or two of this White Clover for Seeds; which will ſave him the Expence of buying of the Seeds, which are often ſold at a great Price; and there will be no Want of Sale for any Quantity they may have to ſpare.

The fourth Sort is an annual or biennial Plant, which periſhes as ſoon as the Seeds are ripe. This grows wild in divers Parts of *England* amongſt Corn, or upon other arable Land; and is ſeldom cultivated, unleſs in Botanic Gardens, it being a medicinal Plant.

The fifth and ſixth Sorts alſo grow wild in *England*; but are often preſerv'd in Botanic Gardens for Variety. The fifth Sort produces Heads very like a Strawberry, from whence it had its Name; and the ſixth Sort has Heads very like Hops, for which Diverſity they are ſometimes cultivated in Gardens; the ſixth Sort is alſo cultivated in the Fields for feeding of Cattle: this is generally known under the Title of Hop-trefoil; but the Seedſmen alſo ſell the Seeds for Trefoil, Nonſuch, and Hop-trefoil; ſo that they make no Diſtinction between theſe three Sorts: and if either is required, they make no Scruple of ſelling the Seeds they have by them; but the twenty-ſecond Sort is what was uſually ſown by this Name, and is ſo now in ſome Countries: this is a much ſtronger Plant than the other, being in Size equal to the Red Clover, and of as ſhort Duration. Of the Hop-clover there are two Sorts; one of them is a much larger Plant than the other; ſo is much preferable for Feed: the Country-people alſo ſow the leaſt Melilot, under the Title of Nonſuch; but this is a low-trailing Plant, continuing but one Year: the Seeds of this are black, ſo may be eaſily diſtinguiſhed.

The ſeventh Sort grows wild in Paſtures in many Parts of *England*, and is cut with the Hay, as is the common Trefoil; from which it differs in having longer and narrower Leaves, and the Flowers being of a deeper red Colour.

The eighth Sort grows wild in *Italy*, *Spain*, and the South of *France*; from whence the Seeds have been procur'd by ſome Perſons who are Lovers of Botany, and preſerve this Plant in their Gardens for the ſake of Variety. This is an annual Plant; wherefore the Seeds ſhould be ſown in Autumn, where the Plants are to remain; and in the Spring they muſt be kept clear from Weeds, which is all the Culture they require. In *May* the Plants will flower, and their Seeds will ripen in *July*. The Branches of this Sort trail on the Ground, and the Flowers are produc'd on Pedicles, from the Diviſions of the ſmall Branches, which are of a bright-red Colour, and collected in ſmall globular Heads.

The ninth Sort is frequently found wild on barren ſandy Lands, in ſeveral Parts of *England*; but is not admitted into Gardens. This Sort has been by ſome Perſons propos'd to be cultivated for the Improvement of barren Land; but as it is a very ſmall Plant, and only an Annual, it is not worth the Trial; becauſe the twenty-ſecond Sort will thrive on any Soil where this will grow, and is a much ſtronger Plant; and if the Seeds are permitted to ſcatter in the manner I have directed, will produce a conſtant Supply of young Plants.

The tenth Sort grows wild in *Germany*, and ſeveral other Parts of *Europe*; but is not a Native of this Country. This Plant produces very long Spikes of rediſh Flowers, which make a pretty Appearance during the time they continue in Beauty. This Plant is preſerv'd by the Curious in Botany for the ſake of Variety; but is ſeldom cultivated in other Gardens.

The eleventh Sort produces very narrow Leaves, and ſlender Spikes of Flowers, which are of a pale-red Colour; and being very ſmall, make but an indifferent Appearance. This is not a Native of this Country.

The twelfth Sort grows wild in the South of *France*, in *Italy* and *Sicily*; from whence the Seeds have been obtain'd by ſome curious Perſons. This Sort producing ſtarry Heads on the Tops of the Stalks, it is preſerv'd for the ſake of Variety.

The thirteenth Sort, producing very beautiful red Flowers, which make a fine Appearance, may be allowed a Place in ſome barren Part of the Garden, where few better Things will grow; or if the Seeds of this Kind were preſerv'd in Quantity ſufficient to ſow a ſmall Field in Sight of an Houſe, it would afford a very agreeable Proſpect when in Flower; and the Graſs is as proper Food for Cattle, as the common Trefoil; but this, being an annual Plant, is not ſo proper to cultivate in common, becauſe it requires an annual Culture.

The fourteenth Sort is cultivated in *Egypt* for feeding of their Cattle; and alſo in ſome other Eaſtern Countries. The Seeds of this Sort have been brought into *Europe* by ſome Perſons who were deſirous of having it cultivated here for the ſame Purpoſes; but this, being an annual Plant alſo, is not ſo proper as the Clover, for the Reaſons before given; beſides, being a tall ſlender Plant, it is very ſubject to be beaten down by hard Rains, which will greatly damage it.

The fifteenth, ſixteenth, ſeventeenth, eighteenth, and nineteenth Sorts are all of them annual Plants, which are preſerv'd in ſome curious Botanic Gardens, for the ſake of Variety; but are not cultivated for Uſe. The Seeds of all theſe annual Trefoils ſhould be ſown in Autumn, early enough for the Plants to get Strength before the Froſt comes on; for when the Seeds are ſown in the Spring, they frequently fail; and thoſe Plants which ariſe, ſeldom grow to any Magnitude, and rarely perfect their Seeds well. Some of theſe Sorts, which are remarkable for the Colours of their Flowers, are worth propagating in ſmall Patches in Paddocks; where they will afford an agreeable Variety, if they are permitted to flower.

The twentieth and twenty-firſt Sorts are alſo annual Plants, which are preſerv'd in Botanic Gardens for Variety; but they are not cultivated for Uſe.

The twenty-ſecond Sort is frequently found growing on chalky Lands, in ſeveral Parts of *England*; and is now cultivated in ſome Counties, in the ſame manner as the common Red Clover. This Sort will thrive much better than the Red Clover, upon dry chalky Lands; ſo is very proper for ſuch Places. It will grow full as large as the Red; the Leaves and Stalks are ſucculent, and the Feed is full as ſweet as the common Clover. The ſimple Title of Trefoil is uſually apply'd to this Sort; though, as I before obſerv'd, the Seedſmen ſell the Hop clover for this, whenever it is demanded.

The twenty-third, twenty-fourth, and twenty-fifth Sorts are alſo preſerv'd in Gardens for Variety; where they are planted in Pots, and ſhelter'd in Winter amongſt other Exotic Plants; but the twenty-third and twenty-fourth Sorts will endure the Cold of our ordinary Winters in the open Air, provided they are planted on a dry Soil, and in a warm Situation; but the twenty-fifth Sort requires to be ſhelter'd from ſevere Froſt, and to have as much free Air as poſſible in mild Weather.

Theſe Plants may be propagated either from Seeds, or by planting Cuttings of them in the Spring, upon a Bed of rich light Earth, obſerving to water and ſhade them until they have taken Root; after which they muſt be carefully clear'd from Weeds during the Summer-ſeaſon; and in *Auguſt* ſome of the Plants ſhould be taken up, and planted in Pots fill'd with light ſandy Earth; which in Winter ſhould be plac'd under a common Hot-bed-frame, where they may have Air in mild Weather; but in froſty Weather may be ſhelter'd with Glaſſes, *&c.* If they are propagated from Seeds, theſe ſhould be ſown toward the Latter-end of *March* upon a Bed of light Earth; and when the Plants are come up, they muſt be carefully clear'd from Weeds, that they may not be overborne thereby; and when they are about four Inches high, they ſhould be planted either into Pots, or the Borders where they are to remain; becauſe if they are ſuffer'd to grow very rank before they are remov'd, they do not bear tranſplanting ſo well. Theſe Plants are preſerv'd in Gardens more for the ſake of Variety, than any real Beauty, eſpecially the two firſt; which ſmell ſo ſtrong of Bitumen, when bruiſed, as ſcarcely to be borne without Uneaſineſs.

TRIOSTEOSPERMUM, Dr. *Tinkar*'s Weed, or falſe Ipecacuana.

The *Characters* are;

It hath a tubulous Flower conſiſting of one Leaf, divided into five roundiſh Segments, and incloſed in a five-leav'd Empalement, having another Cup reſting on the Embryo; which afterward becomes a roundiſh fleſhy Fruit, incloſing three hard Seeds, which are broad at their upper Part, and narrower at Bottom.

We have but one *Species* of this Plant; viz.

Triosteospermum *latiore folio, flore rutilo. Hort. Elth.* Broad-leav'd Trioſteoſpermum, with a rediſh Flower, commonly call'd Dr. *Tinkar*'s Weed, or falſe Ipecacuana.

This Plant is a Native of *New-England*, *Virginia*, and ſome other

Northern Parts of *America*; where it has been frequently us'd as an Emetic, and is commonly call'd Ipecacuana. One of the firſt Perſons who brought it into Uſe, was Dr. *Tinkar*; from whence many of the Inhabitants have call'd it by the Name of Dr. *Tinkar*'s Weed. The Leaves of this Plant greatly reſemble thoſe of the true Ipecacuana; but the Roots are very different: and, by the moſt authentic Account we have of the true Sort, it differs in Flower and Fruit from this Plant.

It grows on low marſhy Grounds, near *Boſton* in *New-England*, very plentifully; where the Roots are taken up every Year, and are continued in Uſe amongſt the Inhabitants of *Boſton*.

This Plant is preſerv'd in ſeveral curious Gardens of *England*, and is hardy enough to thrive in the open Air; but it ſhould be planted on a moiſt light Soil: for if it is on a dry Ground, there muſt be Care taken to water the Plants conſtantly in dry Weather, otherwiſe they will not thrive. It may be propagated by Seeds, which ſhould be ſown on a Border of light Earth, where the morning Sun only comes on it; but if theſe Seeds are ſown in the Spring, they will remain in the Ground a whole Year, before the Plants will come up; ſo that during this time the Border muſt be conſtantly kept clear from Weeds; and the following Spring, when the Plants appear, they ſhould be duly water'd in dry Weather, which will greatly promote the Growth of the Plants. They muſt alſo be conſtantly kept clean from Weeds; which, if permitted to grow amongſt them, will ſoon overbear the Plants while they are young; and either quite deſtroy the Plants, or ſo much weaken them, that they will not recover in a long time.

The Plants may remain in this Seed-border until the *Michaelmas* following, when they ſhould be carefully taken up, and tranſplanted where they are deſign'd to remain. Some of them ſhould be planted in Pots, that they may be ſhelter'd in Winter; leſt thoſe which are in the full Ground ſhould be deſtroy'd by ſevere Froſt.

This Plant may be alſo propagated by parting of the Roots. The beſt Seaſon for this Work is in the Spring, juſt before the Plants begin to ſhoot, which is commonly about the Middle or Latter-end of *March*: but in doing of this, the Roots muſt not be parted too ſmall; for that will prevent their flowering ſtrong. This Plant uſually grows about two Feet high, and the Flowers come out from the Wings of the Leaves; which, being ſmall, make no great Figure in a Garden. However, a few of the Plants may be allow'd a Place in ſome moiſt Wilderneſs-quarters, where they are not too much overſhaded by Trees; where they will thrive, and add to the Variety.

This Plant perfects its Seeds in this Country every Year; which if ſown in Autumn, as ſoon as they are ripe, the Plants will come up the following Spring; by which means a whole Year will be ſaved. Theſe ſeedling Plants will not flower until the third Year; and then they ſeldom grow ſo ſtrong as the older Plants.

TRIPOLIUM. *Vide* After.

TRITICUM, Wheat.

The *Characters* are;

It hath an apetalous Flower, which is diſpos'd into Spikes: each ſingle Flower conſiſts of many Stamina *(or Threads),*

Threads), which are included in a ſquamous Flower-cup, which hath Awns: the Pointal alſo riſes in the Centre, which afterward becomes an oblong Seed, which is convex on one Side, but hath a Furrow on the other; is farinaceous, and incloſed by a Coat which was before the Flower-cup: theſe are produc'd ſingly, and are collected in a cloſe Spike, being affixed to an indented Axis.

The *Species* are;

1. TRITICUM *hybernum ariſtis carens. C. B. P.* White or Red Wheat without Awns.

2. TRITICUM *ſpica & granis rubentibus. Raii Syn.* Red Wheat, in ſome Places call'd *Kentiſh* Wheat.

3. TRITICUM *ſpica & granis albis. Raii Syn.* White Wheat.

4. TRITICUM *ariſtis circumvallatum, granis & ſpica rubentibus, glumis lævibus & ſplendentibus. Raii Syn.* Red-ear'd bearded Wheat.

5. TRITICUM *ſpica villoſa quadrata longiore, ariſtis munitum. Hiſt. Ox.* Cone Wheat.

6. TRITICUM *ariſtatum, ſpica maxima cinericea, glumis hirſutis. Raii Syn.* Grey Wheat, and in ſome Places Duckbil Wheat, and Grey Pollard.

7. TRITICUM *majus, longiore grano, glumis foliaceis incluſo, ſeu Triticum Poloniæ dictum. Hiſt. Ox. Polonian* Wheat.

8. TRITICUM *ſpica multiplici. C. B. P.* Many-ear'd Wheat.

9. TRITICUM *æſtivum. C. B. P.* Summer Wheat.

10. TRITICUM *ſpica hordei Londinenſibus. Raii Syn.* Naked Barley, *vulgo*.

11. TRITICUM *rufum hexaſtichon. C. B. P.* Six-row'd Wheat.

12. TRITICUM *ſemine oblongo. C. B. P.* Long-grain'd Wheat.

13. TRITICUM *ariſtis longioribus, ſpica alba. C. B. P.* White-ear'd Wheat.

I have here mention'd the ſeveral Varieties of this Grain, which have been diſtinguiſh'd by Botaniſts; ſome of which I take to be only ſeminal Variations, and not diſtinct Species: but as many of them are ſpecifically diſtinct, and are cultivated by the Farmers as ſuch, I thought it would not be amiſs to enumerate all the Varieties.

The ſix Sorts firſt-mention'd are what I have commonly obſerv'd growing in divers Parts of *England*; but the Cone Wheat is generally preferr'd, as having a larger Ear, and fuller Grain, than any other Sort: but ſome of the Sorts will thrive beſt on ſtrong Land, and others on a light Soil; ſo that the great Skill of the Farmer is in adapting the Sort of Wheat which is the beſt for his Land.

The *Polonian* Wheat is very ſeldom cultivated in *England*, though ſome Years ſince it was in great Requeſt in *Oxfordſhire*, where it was much cultivated; but for what Reaſon it was neglected, I could never learn.

The eighth Sort is much more common in *Italy* and *Sicily* than any other; but it is ſeldom cultivated here. I have ſeen ſome Stalks of this Wheat with ſeven Ears on them; but they have frequently three or four Ears. In wet Seaſons this Sort of Corn is ſubject to be laid down, from the Weight of the Ears being too great for the Straw to ſupport.

The Summer Wheat was alſo much more cultivated in *England* ſome Years paſt, than at preſent. This Sort was uſually ſown in the Spring of the Year, at the ſame Seaſon with Barley; and it generally ripen'd as ſoon as the Wheat which was ſown in the Autumn; ſo that in very ſevere Winters, when the other Sorts of Wheat have been deſtroy'd, this Sort has been ſown upon the Land, and has ſucceeded very well: but the Grain of this being much thinner, it doth not produce near ſo much Flour as many of the other Sorts; for which Reaſon it has been neglected of late Years.

The tenth Sort is not much cultivated at preſent in *England*, the Grain being thin, and the Flour of it is but coarſe. This is very hardy, and will grow upon any Soil.

The ſix-rowed Wheat is alſo leſs common than many other Sorts in *England*. The Ears of this are but ſhort, and have each ſix Rows of Grain in them. I have obſerv'd ſome Fields of this Corn in *Kent* ſome Years paſt.

The twelfth Sort is cultivated in many Parts of *England*. The Grain of this is pretty long, but not ſo full as that of ſome other Sorts; and it has a much greater Quantity of Chaff. I have ſeen ſome Fields of it in *Suſſex*; and it is alſo much cultivated in *Wales*. The Awns of this Sort are as long as thoſe of Rye; ſo that at a little Diſtance it may be taken for Rye while it is in Ear.

But of all the Sorts, I think the firſt, fourth, and fifth, are the beſt worth cultivating in this Country, as being very hardy, and affording a greater Quantity of Flour than the reſt: though I know ſome Perſons prefer the third to either, on account of the extreme Whiteneſs of its Ears. Some Perſons eſteem the bearded Wheat, becauſe they think it is not ſo ſubject to Mildew as the Sorts without Awns; but of this I think there is no Certainty; for moſt of the Farmers near *London* prefer the coned Wheat to any other.

The Seaſon for ſowing of Wheat is in the Autumn, in moiſt Weather. In the Down-countries the Farmers begin ſowing of their Wheat in *Auguſt*, if there happens Rain; ſo that when they are in their Harveſt, if the Weather ſtops them, they employ their People in ſowing: for if the Corn is not forward in the Autumn, ſo as to cover the Ground before Winter, it ſeldom ſucceeds well on thoſe dry Lands; eſpecially if the Spring ſhould prove dry. But in the low ſtrong Lands, if they get their Wheat into the Ground by the Middle of *November*, the Farmers think they are in good Seaſon: but ſometimes it ſo happens, from the Badneſs of the Seaſon, that in many Places the Wheat is not ſown till *Chriſtmas*, or after; but this late-ſown Wheat is ſubject to run too much to Straw, eſpecially if the Spring ſhould prove moiſt.

The uſual Allowance of Seed-wheat to one Acre of Land, is three Buſhels; but from repeated Experiments, it has been found, that half that Quantity is ſufficient: therefore, if the Farmers have regard to their own Intereſt, they ſhould ſave this Expence of Seed, which amounts to a conſiderable Article in large Farms, eſpecially when it is to be purchas'd; which moſt of the ſkilful Farmers do, at leaſt every other Year, by way of Change; for they find, that the Seeds continued long upon the ſame Land will not ſucceed ſo well, as when they procure a Change of Seeds from a diſtant Country. And the ſame is practis'd by the Huſbandmen of the *Low-Countries*, who commonly procure freſh Seeds from *Sicily* every ſecond or third Year; which they find ſucceed better with them, than the Seeds of their own Country. In the Choice of the Seeds, particular regard ſhould be had to the Land upon which it grew; for if it is light Land, the Wheat which grew upon ſtrong Land is the beſt; and ſo *vice verſa*.

There have been ſome Perſons in *England* curious enough to procure their Seed-wheat from *Sicily*, which has ſucceeded very well; but the Grain of this has prov'd too hard for our *Engliſh* Mills to grind, which has occaſion'd their neglecting to procure their Seeds from thence; nor do I think there can be much Advantage in procuring the Seeds from Abroad, ſince the Lands of *England* are ſo various, as to afford as much Change of Seeds as will be neceſſary: and the leſs we purchaſe from Abroad, the greater will be the Saving to the Public; ſo that it ſhould be the Buſineſs of ſkilful Farmers to want as few Seeds as poſſible; ſince, by Exchange with each other, they may ſo contrive, as not to part with ready Money for any Seeds.

The Produce of an Acre of Wheat is various, according to the Goodneſs of the Soil. In ſome of the ſhallow Down-lands, where there have been near four Buſhels of Corn ſown, I have known the Produce not double of the Seed: but when this is the Caſe, the Farmer had much better let his Land lie waſte, ſince the Produce will not defray the Expence; ſo that more than the Rent of the Land is loſt. And although theſe Sort of Crops are frequent on ſuch Lands, yet ſuch is the Paſſion for plowing among the Huſbandmen at preſent, that if they were not reſtrain'd by their Landlords, they would introduce the Plough into every Field, notwithſtanding they are ſure to loſe by it.

But although the Produce of theſe poor Downs is ſo ſmall, as before related; yet upon good Land, where the Corn has ſtood thin upon the Ground, I have known eight Quarters reaped from an Acre, over the whole Field, and ſometimes much more: and I have been inform'd by Perſons of great Credit, that on good Land, which was drill'd, and manag'd with the Horſe-hoe, they have had twelve Quarters from an Acre of Land; which is a great Produce: and this is with greater Certainty, if the Seaſons prove bad, than can be expected by the common Huſbandry.

TRIUMFETTA.

The *Characters* are;

It hath a Flower conſiſting of ſeveral Petals, which are placed circularly, and expand in form of a Roſe; from whoſe Empalement ariſes the Pointal, which afterward becomes a hard ſpherical burry Fruit, incloſing four angular Seeds.

The *Species* are;

1. TRIUMFETTA *fructu echinato racemoſo. Plum. Nov. Gen.* Triumfetta with a burry-branching Fruit.
2. TRIUMFETTA *fructu echinato racemoſo, minor. Millar.* Smaller Triumfetta, with a burry-branching Fruit.

The firſt of theſe Plants is very common in the Iſland of *Jamaica*, and ſeveral other Parts of *America*; but the ſecond Sort is more rare, being found but in few Places. The Seeds of this Kind were ſent to *England* by Mr. *Robert Millar*, who diſcover'd the Plant on the North Side of the Iſland of *Jamaica*.

Theſe are both very tender Plants; ſo muſt be preſerv'd in the warmeſt Stoves, otherwiſe they will not live thro' the Winter in this Country. They are propagated by Seeds, which muſt be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be each tranſplanted into a ſeparate Pot fill'd with freſh light Earth, and then plung'd into a moderate Hot-bed of

Tanners Bark, and ſhaded from the Sun until they have taken new Root; after which time, they muſt be treated in the ſame manner as hath been directed for other tender Exotic Plants. During the Summer-ſeaſon the Plants may remain in this Hot-bed; but in Autumn they muſt be remov'd into the Stove, and plung'd into the Bark-bed, obſerving to refreſh them often with Water; in very cold Weather it muſt not be given to them in large Quantities. If the Plants live through the Winter, they will flower the following *June*; ſo will ripen their Seeds in *September*; but the Plants may be continued two or three Years, provided they are carefully manag'd.

The Flowers of theſe Plants are ſmall, and of a yellow Colour, ſomewhat like thoſe of Agrimony; for which the Plant has been by ſome ranged under that Genus. Theſe Flowers are produc'd in Bunches at the Extremity of the Shoots; but as they are not very beautiful, they are ſeldom preſerv'd but in ſuch Gardens where Variety is chiefly intended.

The firſt of theſe Sorts riſes to the Height of ſix or ſeven Feet, and the Stem becomes woody. Toward the Top it divides into ſeveral Branches, each of which produces a Spike, or Bunch of Flowers. The Leaves of this Sort are pretty large, and ſhap'd like thoſe of the larger Malvinda.

The ſecond Sort ſeldom riſes more than three Feet high, and has ſmaller Leaves than the firſt. The Stem of this Sort is woody; but it doth not branch ſo much as the former, and is in every reſpect a much leſs Plant than that.

TUBEROSE. *Vide* Polyanthes.

TULIPA, Tulip.

The *Characters* are;

It hath a Lily-flower, compos'd, for the moſt part, of ſix Leaves, ſhaped ſomewhat like a Pitcher: the Pointal, which ariſes in the Middle of the Flower, ſurrounded with Stamina, *afterward becomes an oblong Fruit, which opens into three Parts, is divided into three Cells, and full of plain Seeds, which reſt upon one another in a double Row: to these Marks muſt be added, A coated Root, with Fibres in the lower Part.*

It would be to little Purpoſe to enumerate the ſeveral Varieties of theſe Flowers, which may be ſeen in one good Garden, ſince there is no End of their Numbers; and what ſome People may value at a conſiderable Rate, others reject; and as there are annually a great Quantity of new Flowers obtain'd from Breeders, thoſe which are old, if they have not very good Properties to recommend them, are thrown out, and deſpis'd: I ſhall therefore point out the Properties of a good Tulip, according to the Characteriſtics of the beſt Floriſts of the preſent Age. 1. It ſhould have a tall ſtrong Stem. 2. The Flower ſhould conſiſt of ſix Leaves, three within, and three without; the former ought to be larger than the latter. 3. Their Bottom ſhould be proportion'd to their Top, and their Upper-part ſhould be rounded off, and not terminate in a Point. 4. Theſe Leaves, when open'd, ſhould neither turn inward, nor bend outward; but rather ſtand erect; and the Flower ſhould be of a middling Size, neither over-large, nor too ſmall. 5. The Stripes ſhould be ſmall and regular, ariſing from the Bottom of the Flower; for if there are any Remains of the former ſelf-colour'd Bottom, the Flower is in Danger of loſing its Stripes again. The Chives ſhould not be yellow, but of a brown Colour. When a

Flower has all theſe Properties, it is eſteem'd a good one.

Tulips are generally divided into three Claſſes, according to their Seaſons of Flowering; as *Præcoces*, or early Blowers; *Media's*, or middling Blowers; and *Serotines*, or late Blowers: but there is no Occaſion for making any more Diſtinctions than two, *viz.* Early and Late Blowers.

The early-blowing Tulips are not near ſo fair, nor riſe half ſo high, as the late ones; but are chiefly valued for appearing ſo early in the Spring; ſome of which will flower the Beginning of *February*, if planted near a Wall, Pale, Hedge, or other Shelter: and the others ſucceed them; ſo that they keep flowering until the general Seaſon for theſe Flowers is come, which is toward the End of *April*.

The Roots of the early-blowing Tulips ſhould be planted the Beginning of *September* in a warm Border, near a Wall, Pale, or Hedge; becauſe if they are put into an open Spot of Ground, their Buds are in Danger of ſuffering by morning Froſts in the Spring. The Soil for theſe ſhould be renew'd every Year, where People intend to have them fair. The beſt Soil for this Purpoſe is that which is taken from a light ſandy Paſture, with the Turf rotted amongſt it; and to this ſhould be added a fourth Part of Sea-ſand. This Mixture may be laid about ten Inches deep, which will be ſufficient for theſe Roots, which need not be planted more than four or five Inches deep at moſt. The Off-ſets ſhould not be planted amongſt the blowing Roots, but in a Border by themſelves; where they may be planted pretty cloſe together, eſpecially if they are ſmall; but theſe ſhould be taken up when their Leaves decay in the ſame manner as the blowing Roots; otherwiſe they would rot, if the Seaſon ſhould prove very wet; for theſe are not ſo hardy as the late Blowers, nor do they increaſe half ſo faſt as thoſe; ſo that a greater Care is requir'd to preſerve the Off-ſets of them.

When theſe Tulips come up in the Spring, the Earth upon the Surface of the Borders ſhould be gently ſtirr'd, and clear'd from Weeds; and as the Buds appear, if the Seaſon ſhould prove very ſevere, it will be of great Service to cover them with Mats; for want of which many times they are blighted, and their Flowers decay before they blow; which is often injurious to their Roots, as is alſo the cropping of the Flowers, ſo ſoon as they are blown; becauſe their Roots, which are form'd new every Year, are not at that time arriv'd to their full Magnitude, and are hereby depriv'd of their proper Nouriſhment.

If, when theſe Flowers are blown, the Seaſon ſhould prove very warm, it will be proper to ſhade them with Mats, *&c.* in the Heat of the Day; as alſo, if the Nights are froſty, they ſhould be in like manner cover'd, whereby they may be preſerv'd a long time in Beauty; but when their Flowers are decay'd, and their Seed-veſſels begin to ſwell, they ſhould be broken off juſt at the Top of the Stalks; becauſe if they are permitted to feed, it will injure the Roots.

When the Leaves of theſe Flowers are decay'd (which will be before the late Blowers are out of Flower), their Roots ſhould be taken up, and ſpread upon Mats in a ſhady Place to dry; after which they ſhould be clear'd from their Filth, and put up in a dry Place, where the Vermin cannot come to them, until the Seaſon for planting them again; being very careful to preſerve every Sort ſeparate, that you may know how to diſpoſe of them at the time for planting them again; becauſe it is the better way to plant all the Roots of each Sort together (and not to intermix them, as is commonly practis'd in moſt other Kinds of Flowers); for as there are few of them which blow at the ſame time, ſo, when the ſeveral Roots of one Sort are ſcatter'd through a whole Border, they make but an indifferent Appearance: whereas, when twenty or thirty Roots of the ſame Sorts are plac'd together, they will all flower at the ſame time, and afford a more agreeable Proſpect.

The ſeveral Sorts of theſe early-blowing Tulips riſe to different Heights in their Stems, ſo that ſcarcely any two of them flower to an equal Height. The Duke Van Toll, being one of the firſt that appears in the Spring, is generally very ſhort-ſtalk'd; and ſo the other Sorts, in proportion to their Earlineſs, are ſhorter than thoſe which ſucceed them; and the late-blowing Kinds are all of them conſiderably longer in their Stems than any of the *Præcoces*, or early Blowers; ſo that when they are confuſedly mix'd together, they make a very indifferent Appearance.

The late-blowing Tulips are generally obtain'd from Breeders; which is a Term apply'd to all ſuch Flowers as are produc'd from Seeds, which are of one Self-colour, and have good Bottoms and Chives: theſe, in time, break into various beautiful Stripes, according to the Ground of their former Self-colour; but this muſt be intirely thrown off, otherwiſe they don't eſteem a Flower well broken.

Of theſe Breeders there hath been a great Variety brought into *England* from *Flanders* of late Years, which is the grand Nurſery for moſt Sorts of bulbous-rooted Flowers; but there are ſome curious Perſons who have lately obtain'd many valuable Breeders from Seed ſown in *England*: and doubtleſs, were we as induſtrious to ſow the Seeds of theſe Flowers as the People of *France* and *Flanders*, we might in a few Years have as great a Variety as is to be found in any Part of *Europe*; for altho' it is ſix or ſeven Years from the Sowing before the Flowers blow, yet, if after the firſt Sowing there is every Year a freſh Parcel ſown, when the ſeven Years are expir'd, there will be conſtantly a Succeſſion of Roots to flower every Year; which will reward the Expectation, and keep up the Spirit of raiſing: but it is the Length of Time at firſt, which deters moſt People from the Beginning of this Work.

The manner of propagating theſe Flowers from Seeds is as follows; You ſhould be careful in the Choice of the Seed, without which there can be little Succeſs expected. The beſt Seed is that which is ſaved from Breeders which have all the good Properties before related; for the Seeds of ſtriped Flowers ſeldom produce any thing that is valuable.

The beſt Method to obtain good Seeds is, to make Choice of a Parcel of ſuch breeding Tulip-roots as you would ſave Seeds from, and place them in a ſeparate Bed from the other Breeders, in a Part of the Garden where they may be fully expos'd to the Sun, obſerving to plant them at leaſt nine Inches deep; for if they are planted too ſhallow, their Stems are apt to decay before their Seed is perfected.

Theſe Flowers ſhould always be expos'd to the Weather; for if they are ſhaded with Mats, or any other

Covering, it will prevent their perfecting the Seed. About the Middle of *July* (a little ſooner or later, as the Summer is hotter or colder) the Seeds will be fit to gather; which may be known by the Drineſs of their Stalks, and the Opening of the Seed-veſſels; at which time it may be cut off, and preſerved in the Pods until the Seaſon for ſowing it; being careful to put it up in a dry Place, otherwiſe it will be ſubject to mould, which will render it good for little.

Having ſav'd a Parcel of good Seed, about the Beginning of *September* is the beſt Seaſon for ſowing it; when there ſhould be provided a Parcel of ſhallow Seed-pans or Boxes, which ſhould have Holes in their Bottoms, to let the Moiſture paſs off: theſe muſt be fill'd with freſh ſandy Earth, laying the Surface very even, upon which the Seeds ſhould be ſown as regularly as poſſible, that they may not lie upon each other: then there ſhould be ſome of the ſame light ſandy Earth ſifted over them, about half an Inch thick. Theſe Boxes or Pans ſhould be plac'd where they may have the morning Sun till Eleven of the Clock, in which Situation they may remain until *October*; at which time they ſhould be remov'd into a more open Situation, where they may enjoy the Benefit of the Sun all the Day, and be ſhelter'd from the North Winds, where they ſhould remain during the Winter-ſeaſon; but in the Spring, when the Plants are up, they ſhould be again remov'd to their firſt Situation; and if the Seaſon ſhould be dry, they muſt be refreſh'd with Water, while the Plants remain green; but as ſoon as their Tops begin to decay, there muſt be no more given them, leſt it rot their tender Bulbs; therefore the Boxes ſhould be placed in a ſhady Situation during the Summer-ſeaſon; but not under the Drip of Trees.

Theſe Plants, at their firſt Appearance, have very narrow graſſy Leaves, very like thoſe of Onions, and come up with bending Heads, in the ſame manner as they do; ſo that Perſons who are unacquainted with them, may pull them up inſtead of Graſs, whilſt they are very young, before their Leaves are a little more expanded, which is rarely perform'd the firſt Year; for they ſeldom appear before the Middle of *March*, and they commonly decay about the Latter-end of *May*, or the Beginning of *June*, according as the Seaſon is hotter or colder.

The Weeds and Moſs ſhould alſo be clear'd off from the Surface of the Earth in the Boxes, and a little freſh Earth ſifted over them ſoon after their Leaves decay, which will be of great Service to the Roots. Theſe Boxes ſhould be conſtantly kept clear from Weeds; which if permitted to grow therein, when they are up, their Roots will be apt to draw the Bulbs out of the Ground. At *Michaelmas* they ſhould be freſh-earth'd again; and as the Winter comes on, they muſt be again remov'd into the Sun as before, and treated in the ſame manner, until their Leaves decay in the Spring; when the Bulbs ſhould be carefully taken up, and planted in Beds of freſh ſandy Earth, which ſhould have Tiles laid under them, to prevent the Roots from ſhooting downward; which they often do when there is nothing to ſtop them, and thereby they are deſtroy'd. The Earth of theſe Beds ſhould be about five Inches thick upon the Tiles, which will be ſufficient for nouriſhing theſe Roots while they are young.

The Diſtance which theſe young Bulbs ſhould be allow'd, need not be more than two Inches, nor ſhould they be planted above two Inches deep; but toward the End of *October*, it will be proper to cover the Beds over with a little freſh Earth, about an Inch deep; which will preſerve the Roots from the Froſt, and prevent Moſs or Weeds from growing over them. But if the Winter ſhould be very ſevere, it will be proper to cover the Beds either with Mats or Peas-haulm, to prevent the Froſt from entering the Ground; becauſe theſe Roots are much tenderer while young, than they are after they have acquir'd Strength.

In the Spring the Surface of the Ground ſhould be gently ſtirr'd, to make it clean, before the Plants come up; and if the Spring ſhould prove dry, they muſt be frequently refreſh'd with Water, during the time of their Growth; but this muſt not be given to them in great Quantities, leſt it rot their tender Bulbs; and when the Leaves are decay'd, the Weeds ſhould be taken off, and the Beds cover'd with freſh Earth; which ſhould alſo be repeated again in Autumn.

In theſe Beds the Bulbs may remain two Years; during which time they muſt be conſtantly kept clear from Weeds, and in Spring and Autumn freſh earth'd, in the manner already directed; after which the Bulbs muſt be taken up, and planted into freſh Beds, at four Inches aſunder, and as many deep, where they may remain two Years more; during which time they ſhould have the ſame Culture as before: and after that, the Bulbs being large enough to blow, they ſhould be taken up, and planted in freſh Beds at the uſual Diſtance, and in the ſame manner as old Roots; where when they flower, ſuch of them as are worthy to be preſerv'd ſhould be mark'd with Sticks; and at the Seaſon for takeing up the Bulbs, they muſt be ſeparated from the others, in order to be planted as Breeders in different Beds; but you ſhould by no means throw out the reſt, until they have flower'd two or three Years; becauſe it is impoſſible to judge exactly of their Value in leſs time: for many which at firſt flowering appear beautiful, will afterwards degenerate, ſo as to be of little Value; and others, which did not pleaſe at firſt, will many times improve; ſo that they ſhould be preſerv'd until their Worth can be well judg'd of.

In this Method many Sorts of new Breeders will be annually rais'd, from which there will always be fine Flowers broken; which, being the Produce of a Perſon's own Sowing, will be greatly valued, becauſe they are not in other Hands, which is what enhances the Price of all Flowers; and it has been intirely owing to this Method of raiſing new Flowers, that the *Dutch* have been ſo famous; amongſt whom the Paſſion for fine Tulips did ſome time reign ſo violently, that many of the Floriſts near *Haerlem* have often given an hundred Ducats for one ſingle Root; which Extravagance was the Occaſion of an Order being made by the *States*, to limit the utmoſt Price that ſhould be afterward given for any Tulip-root, were it ever ſo fine.

Having thus given an Account of the Method of raiſing theſe Flowers from Seeds, I ſhall now proceed to the Management of theſe Roots which are termed Breeders, ſo as to have ſome of them every Year break out into fine Stripes.

There are ſome who pretend to have a Secret how to make any Sort of Breeders break into Stripes whenever they pleaſe; but this, I dare ſay, is without Foundation: for from many Experiments which I have made in this Kind, I never could find any Certainty of this Matter: all that can be done by Art, is, to ſhift the Roots every Year into freſh Earth, and a different Situation, by which Method I have had very good Succeſs.

The Earth of theſe Beds ſhould be every Year different; for although it is generally agreed, that lean hungry freſh Earth doth haſten their breaking, and cauſe their Stripes to be the finer, and more beautiful; yet, if they are every Year planted in the ſame Sort of Soil, it will not have ſo much Effect on them, as if they were one Year planted in one Sort of Earth, and the next Year in a very different one, as I have ſeveral times experienc'd.

The beſt Compoſt for theſe Roots is a third Part of freſh Earth from a good Paſture, which ſhould have the Sward rotted with it; a third Part of Sea-ſand, and the other Part ſifted Lime-rubbiſh: theſe ſhould be all mix'd together ſix or eight Months at leaſt before it is us'd, and ſhould be frequently turned, in order to mix the Parts well together. With this Mixture the Beds ſhould be made about two Feet deep, after the following manner: After the old Earth is taken from out of the Bed to the Depth intended, then ſome of the freſh Earth ſhould be put in about eighteen Inches thick: this ſhould be levell'd exactly, and then Lines drawn each Way of the Bed, chequerwiſe: at ſix Inches Diſtance, upon the Centre of each Croſs, ſhould be plac'd the Tulip-roots, in an upright Poſition; and after having finiſh'd the Bed in this manner, the Earth muſt be fill'd in, ſo as to raiſe the Bed ſix or eight Inches higher; obſerving, in doing this, not to diſplace any of the Roots, and alſo to lay the Top of the Beds a little rounding, to throw off the Water.

There are many Perſons who are ſo careleſs in planting their Tulip-roots, as only to dig and level the Beds well, and then with a blunt Dibble to make Holes, into which they put the Roots, and then fill up the Holes with a Rake: but this is by no means a good Method; for the Dibble, in making the Holes, preſſes the Earth cloſely on each Side, and at the Bottom, whereby the Moiſture is often detain'd ſo long about the Roots as to rot them; beſides, the Earth being hard at the Bottom of the Bulbs, they can't ſo eaſily emit their Fibres; which muſt certainly prejudice the Roots.

Theſe Beds ſhould be ſunk, more or leſs, below the Surface, according to the Moiſture or Drineſs of the Soil; for the Roots ſhould be ſo elevated as never to have the Water ſtand near them long, which is very apt to rot them: ſo that where the Soil is very wet, it will be proper to lay ſome Lime-rubbiſh under the Earth, in order to drain off the Wet, and the Beds ſhould be intirely rais'd above the Level of the Ground; but to prevent their falling down into the Walks, after Froſt, or hard Rains, it will be proper to raiſe the Paths between them, either with Sea-coal Aſhes or Rubbiſh, eight or ten Inches, which will ſupport the Earth of the Beds; and theſe Paths may ſlope at each End from the Middle, which will cauſe the Water to run off as it falls. But where the Soil is dry, the Beds may be ſunk eighteen or twenty Inches below the Surface; for in ſuch Places the Beds need not be more than four Inches above the Surface, which will be Allowance enough for their ſettling.

During the Winter-ſeaſon there will be no farther Care requir'd: the Roots, being planted thus deep, will be in no Danger of ſuffering by ordinary Froſts in Winter; but if it ſhould prove very ſevere, ſome rotten Tan or Peas-haulm may be laid over the Beds, to keep out the Froſt; but in the Spring, when their Leaves begin to appear above-ground, the Earth upon the Surface of the Beds ſhould be ſtirr'd to clear it from Weeds, Moſs, *&c.* and when the Flower-buds begin to come up, they ſhould be guarded from Froſt, otherwiſe they are very ſubject to blight and decay ſoon after they appear; but they need only be cover'd in ſuch Nights when there is an Appearance of Froſt; for at all other times they ſhould have as much open Air as poſſible, without which they will draw up weak, and produce very ſmall Flowers.

When theſe Breeders are in Flower, you ſhould carefully examine them, to ſee if any of them have broken into beautiful Stripes; which if you obſerve, there ſhould be a Stick put into the Ground, by every ſuch Root, to mark them, that they may be ſeparated from the Breeders, to plant amongſt the ſtriped Flowers the following Year: but you ſhould carefully obſerve, whether they have thrown off their former Colour intirely; as alſo when they decay, to ſee if they continue beautiful to the laſt, and not appear ſmeared over with the original Colour; in both which Caſes they are very ſubject to go back to their old Colour the next Year. But if their Stripes are diſtinct and clear to the Bottom, and continue ſo to the laſt (which is what the Floriſts call dyeing well), there is no great Danger of their turning back again, as hath been by ſome confidently reported: for if one of theſe Flowers is quite broken (as it is term'd), it will never loſe its Stripes; tho' ſometimes they will blow much fairer than at others, and the Off-ſets will be often more beautiful than the old Roots.

There is nothing more to be obſerv'd in the Culture of ſtriped Flowers, than what has been directed for Breeders, excepting that theſe ſhould be arch'd over with tall Hoops and Rails, that they may be ſhaded from the Sun in the Day-time, and protected from ſtrong Winds, hard Rains, and froſty Mornings; otherwiſe the Flowers will continue but a ſhort time in Beauty; but where theſe Inſtructions are duly follow'd, they may be preſerv'd in Flower a full Month, which is as long as moſt other Flowers continue.

After the Flowers are faded, their Heads ſhould be broken off, to prevent their ſeeding: for if this is not obſerv'd, they will not flower near ſo well the following Year; and this will cauſe their Stems to decay ſooner than otherwiſe they would do; ſo that their Roots may be taken up early in *June*; for they ſhould not remain in the Ground long after their Leaves are decay'd. In takeing theſe Roots out of the Ground, you muſt be very careful not to bruiſe or cut them, which will endanger their rotting; and, if poſſible, it ſhould be done a Day or two after Rain. Theſe Roots muſt be clear'd from their old Covers, and all Sorts of Filth, and ſpread upon Mats in a ſhady Place to dry; after which they ſhould be put up in a dry Place, where Vermin can't get to them, obſerving to keep every Sort ſeparated; but they ſhould not be kept too cloſe from the Air, nor ſuffer'd fer'd to lie in Heaps together, leſt they ſhould grow mouldy; after which they commonly rot when they are planted again.

The Off-ſets of theſe Roots, which are not large enough to produce Flowers the ſucceeding Year, ſhould be alſo put by themſelves, keeping each Sort diſtinct: theſe ſhould be planted about a Month earlier in Autumn than the blowing Roots, in particular Beds in the Flower-nurſery, where they may not be expoſed to public View: but the Earth of the Beds ſhould be prepared for them in the ſame manner as for larger Roots; tho' theſe muſt not be planted above five Inches deep, and may be plac'd much nearer together than thoſe which are to flower; and in one Year moſt of them will become ſtrong enough to flower, when they may be remov'd into the Flower-garden, and plac'd in the Beds amongſt thoſe of the ſame Kinds.

TULIPIFERA, The Tulip-tree.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which expand in ſuch a manner, as (by ſome thought) to reſemble a Tulip: the Pointal riſes in the Centre of the Flower, ſurrounded by a great Number of Chives; and afterward becomes a ſquamous Fruit, or Cone, growing erect: to theſe Marks may be added, The Leaves, for the moſt part, being angular, the Upper-part is hollow'd as if cut off with Sciſſars, terminating in two Points.

We have but one Sort of this Tree; *viz.*

Tulipifera *arbor Virginiana H. L.* The *Virginian* Tulip-tree.

This Tree is very common in *America*, where it grows to a great Magnitude; but in *England* there are at preſent very few of them which have arriv'd to any conſiderable Stature. This Tree was formerly kept in Pots and Tubs, and houſed in Winter with great Care; in which Management the Plants made but poor Progreſs, nor would ever have produced Flowers. But about ſixty Years ago there was one of theſe Trees planted out in a Wilderneſs in the Gardens of the Right Hon. the Earl of *Peterborough* at *Parſons-Green*, near *Fulham*; which ſoon convinc'd the Curious of their Miſtake in the Culture of this Tree, by the great Progreſs it made; and in a few Years after it produced Flowers. This Tree is yet ſtanding, and annually produces a great Quantity of Flowers; tho' ſome of the Branches begin to decay, which perhaps may have been occaſion'd by its being too cloſely ſurrounded with other Trees; whoſe Roots are ſo much entangled with thoſe of this Tree, that they draw the Nouriſhment of the Ground from it. In ſome Years this Tree produces Cones; but they have not ever been perfected, ſo as to contain good Seeds.

There are ſome other Trees of this kind which have produced Flowers ſeveral Years; tho' there are not many of them very large; the biggeſt I have ſeen (excepting that at *Parſons-green*) is not more than 35 or 40 Feet high; whereas Lord *Peterborough*'s is upwards of 60 Feet high, and is proportionably large in the Trunk; but this has a naked Body near forty Feet high, all the Branches growing near the Top of the Tree; which might be occaſioned by being ſo cloſely ſurrounded with other Trees; for I have obſerved, where-ever they have a more open Situation, they are ſubject to extend their Branches, and do not aſpire upward very much; tho' they generally have one upright

Shoot in the Middle, much after the Nature of the Plane-tree, whoſe manner of Growth is very like that of this Tree.

The Flowers which theſe Trees produce, are by no means like thoſe of the Tulip; tho' many Perſons have been ſo incurious as to imagine them ſo, eſpecially the Inhabitants of *America*, who firſt gave the Name of *Tulip-tree* unto this Plant; by which Name it has been ſince call'd by the Inhabitants of *Europe*, who received it from them with the Plants, many Years ſince; but I have not heard, that any of theſe Trees have flower'd in any Part of *Europe*, except in *England*.

Mr. *Cateſby*, in his *Natural Hiſtory of Carolina*, &c. ſays, There are ſome of theſe Trees in *America*, which are thirty Feet in Circumference; that the Boughs are very unequal and irregular, making ſeveral Bends or Elbows, which render the Trees diſtinguiſhable at a great Diſtance, even when they have no Leaves upon them. They are found in moſt Parts of the Northern Continent of *America*, from the Cape of *Florida* to *New-England*, where the Timber is of great Uſe.

This Tree may be propagated from Seeds, which are often brought from *America* in the Cones: theſe ſhould be taken out in the Spring, and ſown in Pots or Boxes fill'd with freſh light Earth, and plac'd upon a moderate Hot-bed, which ſhould be cover'd only with Mats, and not have Glaſſes over them, becauſe the Glaſſes will cauſe the Earth to dry too faſt, and thereby ſpoil the Seeds.

Theſe Pots ſhould be frequently refreſh'd with Water; and when the Plants are come up, they ſhould be plac'd in a ſhady Situation during the Summer-ſeaſon; but in Winter they muſt be put into a Frame, where they may enjoy the open Air in mild Weather, but muſt be ſhelter'd from Froſt.

In the following Spring the Plants ſhould be taken up, and each planted in a ſeparate ſmall Pot fill'd with freſh light Earth; and if theſe Pots are plung'd into a moderate Hot-bed, under Mats, it will promote their Rooting. In Summer theſe Plants muſt be remov'd into the Shade, and in Winter into a Frame, as before: after this manner they may be treated three or four Years, until they have acquir'd Strength; when they may be turn'd out of the Pots in the Spring, and planted where they are to remain, which ſhould always be near the Shelter of other Trees; where they will grow much better than in an open Situation, provided they are not too much crouded or overhung by large Trees.

There are ſome People who propagate this Tree by Layers; but they are commonly two or three Years before they take Root, and ſeldom make ſuch ſtrait Trees as thoſe rais'd from Seeds; though indeed they will produce Flowers ſooner, as is always the Caſe with ſtinted Plants.

This Tree ſhould be planted on a light loamy Soil, not too dry; on which it will thrive much better than upon a ſtrong Clay, or a dry gravelly Ground; for in *America* they are chiefly found upon a moiſt light Soil, where they will grow to a prodigious Size: tho' it will not be proper to plant theſe Trees in a Soil which is too moiſt, in *England*; becauſe it might endanger the rotting of the Fibres of the Roots, by the Moiſture continuing too long about them; eſpecially if the Bottom be a Clay, or a ſtrong Loam, which will detain the Wet.

TURKS CAP. *Vide* Lilium flore reflexo.

TURKY-WHEAT. *Vide* Mays.

TURNEP. *Vide* Rapa.

TURNERA.

The *Characters* are;

It hath a funnel-ſhap'd Flower, conſiſting of five Leaves, which are faſtened to the Calyx, *which is monopetalous, and divided into five Parts at the Top: under the Flower-cup there are two Leaves, which join at the Bottom, and ſurround the Cup: from the Centre of the Flower-cup ariſes the Pointal, which is divided into three Parts to the Bottom, and ſurrounded by five* Stamina: *this Pointal afterward becomes an almoſt ſpherical Fruit, which is divided into three Parts, and filled with roundiſh Seeds, which are faſten'd to the* Placenta *by ſlender Threads.*

The *Species* are;

1. TURNERA *fruteſcens ulmifolia. Plum. Nov. Gen.* 15. Shrubby Turnera, with an Elm-leaf.

2. TURNERA *fruteſcens, lycopi folio.* Shrubby Turnera, with a Water-horehound-leaf.

Theſe Plants are both of them Natives of the warm Parts of *America.* The firſt Species was found by Father *Plumier* in *Martinico,* who gave it the Name of *Turnera,* from Dr. *Turner,* a famous *Engliſh* Phyſician, who lived in Queen *Elizabeth*'s Reign, and wrote an Herbal, in which he has chiefly figur'd and deſcrib'd the uſeful Plants.

The other Species was diſcover'd by Sir *Hans Sloane,* who has figur'd it in his *Natural Hiſtory of* Jamaica, under the following Name; *Ciſtus urticæ folio, flore luteo, vaſculis trigonis.* But both theſe Sorts were obſerv'd by my late Friend Dr. *William Houſtoun,* in ſeveral Parts of *America.* Theſe grow to the Height of five or ſix Feet, and may be trained into regular Shrubs: they both produce yellow Flowers, which come out at the Footſtalks of the Leaves, and are continued for at leaſt nine Months, which renders them worthy of a Place in the Stove.

They may eaſily be propagated, by ſowing their Seeds on an Hot-bed early in the Spring; and when the Plants are come up two Inches high, they muſt be tranſplanted into ſmall Pots, and plung'd into an Hot-bed of Tanners Bark, obſerving to water and ſhade them until they have taken Root; after which time they muſt be treated as hath been directed for the Guava's; to which the Reader is deſir'd to turn, to avoid Repetition. The Seeds of theſe Plants will often fall into the Pots which are placed near them in the Stove; which will grow, and ſoon furniſh Plants enough, after a Perſon is once poſſeſs'd of them. Theſe Plants are too tender to live in the open Air in *England:* ſo they muſt be plac'd in the Bark-bed in the Stove; where, during the Winter-ſeaſon, they muſt be kept warm, and frequently water'd; but in the Summer-ſeaſon they muſt have a great Share of Air, otherwiſe they will draw up tender, and not produce many Flowers.

When the Plants are grown pretty large, they may be treated more hardily, by placing them in the dry Stove; where, if they are kept in a moderate Degree of Heat, they will thrive and flower very well. Thoſe who would ſave the Seeds of theſe Plants, muſt watch them carefully; becauſe, when they are ripe, they ſoon ſcatter, if they are not gathered.

TURNSOLE. *Vide* Heliotropium.

TURRITIS, Tower-muſtard.

The *Characters* are;

The Flower conſiſts of four Leaves, which expand in form of a Croſs; out of whoſe Empalement riſes the Pointal, which afterward becomes a long ſmooth Pod, which grows for the moſt part upright, and opens into two Parts, in each of which are contain'd many ſmooth Seeds.

The *Species* are;

1. TURRITIS *vulgatior. J. B.* Common Tower-muſtard.

2. TURRITIS *foliis inferioribus cichoraceis, cæteris perfoliata. Tourn.* Tower muſtard with its Under-leaves like thoſe of Cichory, and its Upper-leaves like Thorough-wax.

3. TURRITIS *muralis minor. Pet. H. B.* Wall-creſs, or Tower-muſtard, with Daiſy-leaves.

4. TURRITIS *leucoii folio. Tourn.* Tower-muſtard with a Stock-gilliflower-leaf.

3. TURRITIS *annua verna, flore purpuraſcente Inſt. R. H.* Spring annual Tower-muſtard, with a purple Flower.

The four Sorts firſt-mention'd have but little Beauty; ſo are ſeldom preſerv'd but in Gardens of Botany, for Variety; but the fifth Sort makes a pretty Appearance early in the Spring. This ſeldom grows more than four Inches high, producing purple Flowers at the Top, ſhap'd like thoſe of the Heſperis. If the Seeds of this Plant are ſown in Autumn, or are permitted to ſcatter when they are ripe, the Plants will abide the Winter, and flower very early in the Spring. But as the Flowers are not very large, the Seeds ſhould be ſown in Patches, in the Borders of the Flower-garden, in the ſame manner as the Dwarf Lychnis, Candy-tuft, *Venus* Looking-glaſs, &c. that there may be ſeveral Plants in each; whereby they will make a better Appearance than when they are diſpers'd.

The other Sorts may be all cultivated by ſowing their Seeds upon a Bed of light dry Earth in the Spring; and when the Plants are come up, they ſhould be tranſplanted where they are to remain for good, obſerving to water them until they have taken Root; after which they will require no farther Care, but to clear them from Weeds; and the ſecond Year they will produce Seeds, after which the Plants never continue.

TUSSILAGO, Colts-foot.

The *Characters* are;

It hath a radiated Flower, whoſe Diſk conſiſts of many Florets; but the Crown is compos'd of many Half-florets: the Embryoes are included in a multifid Flower-cup; which are afterward turn'd to downy Seeds fix'd in a Bed: to which Notes may be added, The Flowers appearing before the Leaves in Spring.

The *Species* are;

1. TUSSILAGO *vulgaris. C. B. P.* Common Colts-foot.

2. TUSSILAGO *Alpina rotundifolia glabra. C. B. P.* Round-leav'd ſmooth Colts-foot of the *Alps*.

The firſt of theſe Sorts is very common in watery Places in almoſt every Part of *England*, and is rarely kept in Gardens; for the Roots creep under ground, and increaſe ſo faſt, that in a ſhort time they will ſpread over a large Spot of Ground.

The ſecond Sort grows wild upon the *Alps*, from whence it has been tranſplanted into ſome curious Botanic Gardens for the ſake of Variety: the Flowers of this are purple, and thoſe of the common Sort are yellow.

V A

VACCARIA. *Vide* Lychnis.

VACCINIUM, The Bilberry, Whortleberry, or Cranberry.

The *Characters* are;

The Flower is of one Leaf, and ſhaped like a Pitcher, having a ſmall permanent Empalement: the Germen *ariſes from the Bottom of the Empalement, attended by eight* Stamina, *each ſuſtaining a forked Summit: the* Germen *afterward becomes a ſoft globular umbilicated Berry, having four Cells incloſing ſmall Seeds.*

The *Species* are;

1. VACCINIUM *caule angulato, foliis ſerratis annuis. Lin. Flor.* Common Black-whorts, or Bilberries.

2. VACCINIUM *foliis perennantibus, obverſe ovatis. Lin. Flor.* Evergreen Red-whorts, or Whortleberries.

3. VACCINIUM *ramis filiformibus repentibus, foliis ovatis perennantibus. Lin. Flor.* Cranberries, or Bog-whorts.

The firſt Sort grows very common upon large wild Heaths, in many Parts of *England*; but is never cultivated in Gardens, it being with great Difficulty tranſplanted; nor will it thrive when it is remov'd thither: for from many Trials which I have made, by taking up the Plants at different Seaſons, and planting them into Gardens, I could never ſucceed ſo as to preſerve the Plants above two Years, and thoſe never produc'd any Fruit; ſo that it is not worth the Trouble of cultivating.

The Fruit of this Sort is gather'd by the poor Inhabitants of thoſe Villages which are ſituated in the Neighbourhood of their Growth, and carried to the Market-towns. Theſe are by ſome eaten with Cream or Milk; they are alſo put into Tarts, and much eſteem'd by the People in the North; but they are ſeldom brought to *London*. The Shrub on which theſe grow, riſes about two Feet high, having many Stems; which are garniſh'd with oblong Leaves, ſhap'd like thoſe of the Box-tree, but ſomewhat longer; and are a little ſawed on their Edges. The Flowers are of a greeniſh Colour, ſhap'd like thoſe of the *Arbutus*, or Strawberry-tree, of a greeniſh-white Colour, changing to a dark-red toward the Top. The Fruit are about the Size of large Juniper-berries, and of a deep-purple Colour; having a Flue upon them when they are untouch'd, like the blue Plums; which rub off with handling.

The ſecond Sort is of much humbler Growth, ſeldom riſing above ſix or eight Inches high. The Leaves of this Sort are ſo like that of the Dwarf-box, as that, at a Diſtance, the Plants are often taken for it by Perſons of Skill. This is an evergreen Shrub, which grows upon moory Ground in ſeveral Parts of the North; but it is full as difficult to tranſplant into Gardens, as the other Sort; though I have been aſſur'd by Perſons of Credit, that they have ſeen this Sort planted to make Edgings to the Borders of the Gardens in *Norway* and *Sweden*; where the Plants may grow much better from the Cold of thoſe Climates, than they will do in *England*; for this is a Native of very cold Countries. I have ſeveral times receiv'd Plants of this Sort from *Greenland*, by the Whale-Ships. The Berries of this Sort are red, and have a more agreeable acid Flavour than thoſe of the firſt Sort. This Fruit is frequently us'd for Tarts in ſeveral of the Northern Counties, where the Plants grow wild upon the Moors.

The third Sort produces long ſlender Branches, not bigger than Thread, which trail upon the moſſy Bogs; ſo are often hid by the Moſs. Theſe Branches are thinly garniſh'd with ſmall Leaves, about the Size and Shape of thoſe of Thyme; haveing their upper Surface of a ſhining-green Colour, but are white underneath. The Flowers are generally produc'd toward the Extremity of the Shoots, which are in Shape like thoſe of the former Sorts; but are ſmaller, and of a red Colour. Theſe grow upon long ſlender Footſtalks, and are ſucceeded by round red ſpotted Berries, of a ſharp acid Flavour; which are much eſteem'd by the Inhabitants of the Places near the Bogs where they grow. Some uſe them for Tarts, and others eat them with Milk or Cream.

This Sort is a Native of Bogs; therefore cannot by any Art be propagated upon dry Land: but where there are natural Bogs, the Plants may be taken up carefully, preſerving ſome of the Soil to their Roots, and tranſplanted into the Bogs in the Autumn: and if they are once fix'd in the Place, they will ſpread, and propagate themſelves in great Plenty, and require no farther Care.

The two Sorts firſt-mention'd alſo propagate very faſt by their creeping Roots; ſo that when they are fixed in a proper Soil, they will ſoon overſpread the Ground; as the Heaths upon which they naturally grow, are generally cover'd with the Plants. The firſt Sort grows with the Heath, their Roots intermixing together, and frequently is found upon ſandy Heaths in divers Parts of *England*; but the ſecond Sort grows only upon mooriſh Land, where, by its creeping Roots, the Ground is ſoon cover'd with the Plants.

There are ſeveral other Species of this Genus, ſome of which are Natives of *Spain* and *Portugal*, others of *Germany* and *Hungary*, and ſome of the Northern Parts of *America*, from whence thoſe large Fruit are brought to *England*, which are us'd by the Paſtry-cooks of *London*, during the Winter-ſeaſon, for Tarts: but as all theſe Sorts naturally grow upon Swamps and Bogs, they are not eaſy to tranſplant into Gardens, ſo as to thrive, or produce Fruit; therefore there can be little Hopes of having thoſe Sorts in *England*.

VALERIANA, Valerian.

The *Characters* are;

The Leaves grow by Pairs, oppoſite upon the Stalk: the Flower conſiſts of one Leaf, is tubuloſe, and divided into five Segments at the Top: theſe Flowers are, for the moſt part, collected into a ſort of Umbel upon the Top of the Stalks; and are ſucceeded by oblong flat Seeds, which are wing'd with a ſoft Down.

The *Species* are;

1. VALERIANA *hortenſis, Phu oluſatri folio Dioſcoridis. C. B. P.* Great Garden Valerian, or Phu.

2. VALERIANA *ſylveſtris magna aquatica. J. B.* Great wild Water Valerian.

3. VALERIANA *major ſylveſtris montana. C. B. P.* Great wild Mountain Valerain.

4. VALERIANA *paluſtris minor. C. B. P.* Small Marſh Valerian.

5. VALERIANA *rubra. C. B. P.* Red Garden Valerian.

6. VALERIANA *rubra anguſtifolia. C. B. P.* Narrow-leav'd red Garden Valerian.

7. **Valeriana** *marina latifolia major alba. Mor. Umb.* Great broad-leav'd white Sea Valerian.

8. **Valeriana** *Alpina, foliis integris, radice repente, inodora. Raii Hiſt. Alpine* Valerian, with undivided Leaves, and a creeping Root, without Smell.

9. **Valeriana** *Alpina prima. C. B. P.* The firſt *Alpine* Valerian of *Caſpar Bauhin.*

10. **Valeriana** *Alpina altera. C. B. P.* Another *Alpine* Valerian of *Caſpar Bauhin.*

11. **Valeriana** *Alpina, ſcrophulariæ folio. C. B. P. Alpine* Valerian, with a Figwort-leaf.

12. **Valeriana** *montana, ſubrotundo folio. C. B. P.* Mountain Valerian, with a roundiſh Leaf.

13. **Valeriana** *Alpina, nardo Celticæ ſimilis. C. B. P. Alpine* Valerian, reſembling the *Celtic* Spikenard.

14. **Valeriana** *Cretica, filipendulæ radice. Inſt. R. H. Candy* Valerian, with a Dropwort-root.

15. **Valeriana** *Celtica. Inſt. R. H. Celtic* Valerian, or Spikenard.

16. **Valeriana** *marina anguſtifolia, ſive minor alba. Mor. Hiſt.* Narrow-leav'd or ſmaller white Sea Valerian.

17. **Valeriana** *Alpina minor. C. B. P.* Smaller *Alpine* Valerian.

18. **Valeriana** *tuberoſa Imperati. Tourn. Cor.* Tuberoſe-rooted Valerian of *Imperatus.*

19. **Valeriana** *Orientalis anguſtifolia, floribus & radice valerianæ hortenſis. Tourn. Cor.* Narrow-leav'd Eaſtern Valerian, with the Flowers and Root of the Garden Valerian.

20. **Valeriana** *Orientalis, alliariæ folio, flore albo. Tourn. Cor.* Eaſtern Valerian, with a Sawce-alone-leaf, and a white Flower.

21. **Valeriana** *Orientalis, ſiſymbrii Matthioli folio. Tourn. Cor.* Eaſtern Valerian, with a Water-creſs-leaf.

22. **Valeriana** *Orientalis minima, flore leucophæo. Tourn. Cor.* The leaſt Eaſtern Valerian, with a whitiſh Flower.

23. **Valeriana** *maxima Pyrenaica, cacaliæ folio. D. Fagon. Inſt. R. H.* The greateſt *Pyrenean* Valerian, with a ſtrange Coltsfoot-leaf.

24. **Valeriana** *foliis calcitrapæ. C. B. P.* Valerian with Leaves like thoſe of the Star-thiſtle.

25. **Valeriana** *Luſitanica annua latifolia laciniata. Inſt. R. H.* Broad jagged-leav'd annual Valerian of *Portugal.*

26. **Valeriana** *humilis Americana, folio rotundo ſubtus argenteo. Plum.* Dwarf *American* Valerian, with a round Leaf, white underneath.

The firſt of theſe Sorts is propagated in *England* for medicinal Uſe; and is call'd in the Shops by the Name of *Phu*, to diſtinguiſh it from the Mountain Valerian, which is preferr'd to all the other Sorts by the modern Phyſicians; tho' the Roots of this firſt are ſtill continu'd in ſome of the capital Medicines.

This Plant is propagated by parting of its Roots, either in the Spring or Autumn, which ſhould be planted in Beds of freſh dry Earth, about eight or ten Inches aſunder; for they commonly ſpread and multiply very faſt: if the Seaſon be dry, you muſt water the Plants until they have taken Root; after which they will require no farther Care, but to keep them clean from Weeds; and in Autumn, when their Leaves are decay'd, the Roots ſhould be taken up, and dry'd for Uſe.

The ſecond Sort is very common in moiſt Places, and by the Sides of Rivers and Ditches, in moſt Parts of *England*; but is rarely cultivated in

Gardens. The Roots of this Kind, being ſo common near *London*, are generally ſold in the Markets inſtead of the third Sort, which is what ſhould always be uſed, as being by far the ſtrongeſt, and moſt valuable.

The third Sort is generally found upon dry chalky Soils, in ſhady Places, in divers Parts of *England*; the Roots of which are much preferable to thoſe of the ſame Kind which are cultivated in Gardens; as are all the Sorts of aromatic Plants, when gather'd from their native Places of Growth.

This Plant may be propagated by parting the Roots either in Spring or Autumn, as was directed for the firſt Sort; but you ſhould always obſerve to plant them upon a dry freſh undung'd Soil; in which, tho' the Roots will not make near ſo great Progreſs, as in a rich moiſt Soil; yet they will be much preferable to them for Uſe. Theſe Roots ſhould alſo be taken up, when the Leaves decay in Autumn, and preſerv'd dry until uſed.

The fourth Sort is very common in moiſt Soils, in divers Parts of *England*; but is ſeldom propagated in Gardens. This is plac'd among the officinal Simples, in the *College Diſpenſatory*; though it is rarely uſed in Medicine. It may be propagated in a moiſt Soil, by parting the Roots as the former. This Sort is Male and Female in different Plants.

The fifth, ſixth, and ſeventh Sorts are propagated in Gardens for the Beauty of their Flowers; but they are only proper for large Gardens, being very apt to grow too large for ſmall Places. Theſe may be propagated by parting their Roots, in the manner before directed, or from Seeds, which ſhould be ſown in Autumn, ſoon after they are ripe, upon a Bed of freſh light Earth; and in the Spring, when the Plants come up, they ſhould either be tranſplanted into Nurſery-beds, or the Borders where they are to remain for good.

Some of theſe Plants will flower the firſt Seaſon; but the ſecond Year they will all flower very ſtrong. They commonly grow about three Feet high; and when the Roots are ſtrong, they will continue flowering moſt Part of the Summer, which renders them worthy of a Place in large Borders, and alſo in Avenues, and other abject Parts of the Garden, they being very hardy, and will grow in almoſt any Soil or Situation; but their Roots will abide longeſt in a dry barren Soil; for in rich moiſt Places they ſeldom have a Continuance for a longer time than two Years.

The Seeds of theſe Kinds will often get into the Joints of old Walls, where they will grow and abide many Years, without any Care or Culture, and produce Flowers moſt Part of the Summer; and in ſuch a Situation they will endure all Weathers, without the leaſt Injury: theſe Plants are never uſed in Medicine.

The eighth, ninth, tenth, eleventh, and ſeventeenth Sorts grow on the *Alps*; from whence they have been procured by ſome curious Botaniſts, and are preſerved in their Gardens for Variety: theſe are abiding Plants, which may be propagated by parting of their Roots. The beſt time to remove theſe Plants, and part their Roots, is ſoon after *Michaelmas*, when their Leaves decay, that they may have good Rooting in the Ground before the dry Weather comes on in the Spring; otherwiſe they will not flower ſtrong the following Summer. All theſe Sorts ſhould be planted on a ſtrong loamy

Soil, and in a ſhady Situation; where they will thrive much better than in a light Earth, and an open Situation; in which they will not live, unleſs they are duly watered in dry Weather.

The twelfth Sort has been found on the Mountains in the North of *England*; but is very common in ſeveral Parts of *Germany*, as alſo on the *Alps*, and *Pyrenean* Mountains.

The fourteenth Sort grows in ſeveral Iſlands of the *Archipelago*, and alſo in *Liguria*: it is chiefly found on Hills and Mountains which are moiſt. The Roots of this Sort are as large as ſmall Walnuts, which hang from Dugs after the manner of Dropwort. Theſe Roots, when bruiſed, emit a Smell very like Spikenard.

The ſixteenth Sort is the true Spikenard, which is uſed in Medicine. This grows in great Plenty amongſt the Moſs, on the Tops of the *Alps*, where the Snow lies a great Part of the Year. Theſe Roots are taken up for Uſe in *Auguſt*, when the Leaves decay; at which time they have the ſtrongeſt Scent.

The nineteenth Sort has alſo knobbed Roots, about as large as Walnuts, which have a Scent ſomewhat like Spikenard. This Sort has Leaves ſomewhat like thoſe of the ſmall Valerian; and the Flowers reſemble thoſe of the great Garden Sort, which grow about two Feet high.

All theſe Sorts are very hardy Plants in reſpect to Cold; but they will not live in a dry light Soil, and an open Situation; therefore whoever is inclinable to cultivate them, ſhould plant them on a moiſt loamy Soil, on a North Border, where they may be intirely ſcreened from the Sun; and in very dry Weather they muſt be conſtantly watered, otherwiſe they will not thrive. Thoſe Sorts with knobby Roots ſhould not be often tranſplanted: if they are removed every third Year, it will be often enough; but then the Ground between the Roots ſhould be every Spring gently dug to looſen it, being careful not to cut or bruiſe the Roots. Theſe Plants uſually flower in *June*; but they ſeldom produce good Seeds in *England*.

The ſixteenth Sort is not very common in the *Engliſh* Gardens at preſent. This only differs from the Garden Valerian with red Flowers, in having narrow Leaves; therefore may be propagated in the ſame manner as hath been before directed for the red and white Garden Valerian. It will alſo propagate itſelf by Seeds, if they are permitted to ſcatter in a ſhady Situation, where the Plants will come up without any Care, and may be tranſplanted into large Borders, where they will make an agreeable Variety, and continue a long time in Flower.

The nineteenth, twentieth, twenty-firſt, and twenty-ſecond Sorts were diſcovered by Dr. *Tournefort* in the *Levant*, from whence their Seeds were ſent to *Paris*. Theſe are alſo hardy Plants, which will live in the open Air; and ſhould have a ſhady Situation, and be planted on a moiſt light Soil.

The twenty-third Sort is a Native of the *Pyrenean* Mountains; but is preſerved in the Gardens of the Curious in Botany, for the ſake of Variety. This, being a biennial Plant, muſt be permitted to ſcatter its Seeds, for a Supply of young Plants. This Plant ſhould have a moiſt Soil, and a ſhady Situation; where it will thrive, and produce good Seeds; but if the Seeds are not ſown in Autumn, they ſeldom grow; ſo that when they ſcatter themſelves, they generally grow better, than when they are ſown by Hand. This Sort riſes three Feet high, and has very broad Leaves; but the Flowers, being ſmall, make no great Appearance; and when their Seeds are ripe, the Plants frequently periſh ſoon after.

The twenty-fourth and twenty-fifth Sorts are annual Plants; which, if once introduc'd into a Garden, will ſcatter their Seeds, and maintain their Situation. The Seeds of theſe Kinds will diſperſe themſelves to a great Diſtance by the Help of the Down which adheres to them; and often grow on Walls and Buildings, where they are ſtinted and ſmall; but will flower and ſeed, whereby they will become errant Weeds; notwithſtanding they decay as ſoon as their Seeds are ripe. Theſe two Sorts will grow on any Soil, or in any Situation; but they will thrive beſt on a moiſt Soil, and in a ſhady Situation. Their Seeds muſt be ſown in Autumn, otherwiſe they ſeldom ſucceed.

The twenty-ſixth Sort, being a Native of the warm Parts of *America*, is a tender Plant, and very rare in *Europe*; for the Seeds will not grow, when kept long out of the Ground; but ſhould be ſown in Tubs of Earth abroad; and when the Plants are come up, they may be brought over to *England*. This Sort muſt be preſerved in a Stove; for it is too tender to live in the open Air in this Country. In Summer this Plant ſhould have a large Share of free Air, by opening the Glaſſes of the Stove in warm Weather; and muſt be frequently watered; for it naturally grows on low marſhy Places, and requires a large Share of Water in hot Weather; but in Winter it muſt be kept warm, and have but little Water in very cold Weather.

VALERIANA GRÆCA. *Vide* Polemonium.

VALERIANELLA, Corn-ſallad, or Lamb's-lettuce.

The *Characters* are;

The Leaves grow by Pairs oppoſite on the Branches: the Branches are always divided into two Parts, and appear at the Tops like an Umbrella: the Flower conſiſts of one Leaf, which is cut into many Segments, and is ſucceeded by one naked Seed, having no Down adhering to it; in which it differs from the Valerian.

The *Species* are;

1. VALERIANELLA *arvenſis præcox humilis, ſemine compreſſo. Mor. Umb.* Early low Corn-ſallad, with a flat Seed.

2. VALERIANELLA *arvenſis præcox humilis, foliis ſerratis. Tourn.* Early low Corn-ſallad, with ſerrated Leaves.

3. VALERIANELLA *arvenſis ſerotina altior, ſemine turgidiore. Mor. Umb.* Taller late Corn-ſallad, with a turgid Seed.

4. VALERIANELLA *ſemine ſtellato. C. B. P.* Corn-ſallad with a ſtarry Seed.

5. VALERIANELLA *cornucopioides rubra vel Indica. Mor. Umb.* Red or *Indian* Corn ſallad, reſembling the Cornucopiæ.

6. VALERIANELLA *ſemine umbilicato nudo rotundo. Mor. Umb.* Corn-ſallad with a round naked umbilicated Seed.

7. VALERIANELLA *ſemine umbilicato nudo oblongo. Mor. Umb.* Corn-ſallad with an oblong naked umbilicated Seed.

8. VALERIANELLA *ſemine umbilicato hirſuto majore. Mor. Umb.* Corn-ſallad with a larger hairy umbilicated Seed.

9. VALERIANELLA *ſemine umbilicato hirſuto minore. Mor. Umb.* Corn-

ſallad with a ſmaller hairy umbilicated Seed.

10. Valerianella *Cretica, fructu veſicario. Tourn. Cor.* Candy Corn-ſallad, with a bladder'd Fruit.

11. Valerianella *cornucopioides echinata. Inſt. R. H.* Prickly Corn-ſallad, reſembling an Helmet.

12. Valerianella *Orientalis, fructu parvo corniculato. Tourn. Cor.* Eaſtern Corn-ſallad, with a ſmall horned Fruit.

The three firſt Sorts are found wild in ſeveral Parts of *England.* The third Sort is often cultivated in Gardens, for Sallads in the Spring; though either of the three may be cultivated for the ſame Purpoſe, they being equally good. The Seeds of theſe Plants ſhould be ſown in Autumn, ſoon after they are ripe; for if they are kept till Spring, the Plants ſeldom come up the ſame Summer; the Seeds, commonly remaining in the Ground, will come up the ſucceeding Spring, notwithſtanding the Place be dug, and ſown with other Seeds, as I have often obſerv'd.

Theſe Plants will grow in almoſt any Soil or Situation, and require no farther Care, but to keep them clear from Weeds, until they are fit for Uſe: they ſhould always be cut while they are young; for when they are grown pretty large, they will become ſtrong and bitter.

The fourth and fifth Sorts are preſerv'd in Botanic Gardens for Variety; but are not of any Uſe: theſe may be propagated by ſowing their Seeds in the Spring, upon a Bed of dry Earth, where they may remain to flower and ſeed.

The ſixth, ſeventh, eighth, and ninth Sorts are Varieties of the common Corn-ſallad, which are preſerv'd in ſome curious Botanic Gardens for the ſake of Variety. Theſe are all very hardy Plants, which, if permitted to ſcatter their Seeds, will come up in almoſt any Soil or Situation; and require no other Care, but to keep them clear from Weeds. When they are not permitted to ſcatter their Seeds, they ſhould be ſown in Autumn; otherwiſe the Seeds will often lie in the Ground till the following Autumn, before they grow.

The tenth and twelfth Sorts were diſcover'd by Dr. *Tournefort* in the *Levant,* from whence he ſent their Seeds to the Royal Garden at *Paris*; which have ſince been communicated to many curious Perſons in *England.* Theſe are very hardy Plants, which may be propagated by Seeds, in the ſame manner as the other Sorts; and if they are permitted to ſcatter their Seeds, will come up, and require no other Care, but to keep them clear from Weeds.

The eleventh Sort produces Tufts of red Flowers, which are ſhaped like an Helmet, and make a pretty Appearance, when blown: this is alſo an hardy Plant; and may be propagated in the ſame manner as the other Sorts.

VANILLA.

The *Characters* are;

It hath an anomalous Flower, conſiſting of ſix Leaves, five of which are placed in a circular Order; and the other, which occupies the Middle, is concave: the Empalement afterward becomes an horned ſoft fleſhy Fruit, filled with very ſmall Seeds.

The *Species* are;

1. Vanilla *flore viridi & albo, fructu nigreſcente. Plum. Nov. Gen.* Vanilla with a green and white Flower, and a blackiſh Fruit.

2. Vanilla *flore violaceo, fructu breviori rubro. Plum. Nov Gen.* Vanilla with a violet-colour'd Flower, and a ſhort red Fruit.

3. Vanilla *flore albo, fructu breviori*

viori corallino. Plum. Nov. Gen. Vanilla with a white Flower, and a ſhort coralline Fruit.

The Fruit of theſe Plants is call'd by the *Spaniards*, in *America*, Vanilla, or Vinello; and is much uſed by them to ſcent their Chocolate. It is the firſt Species here mention'd, which is chiefly eſteem'd. This grows plentifully in the *Bay of Campechy*, in the *Weſt-Indies*; where they are uſually ſold for about Three-pence each Fruit, *Engliſh* Money.

The other two Sorts are found in ſeveral Parts of *America*, where they always grow in low marſhy Places under Trees, and faſten themſelves to the Trunks of the Trees, and are thereby ſupported. The Fruit of theſe Kinds are rarely uſed, being of little Value; but the other Sort is often brought into *Europe*, and ſold by the Druggiſts.

The Method of gathering and preparing of this Fruit for Uſe is little known to the *Europeans*, being manufactur'd by the *Indians*, who ſell it very cheap to the *Spaniards*. However, I ſhall ſubjoin an Account which I received from an intelligent Perſon, who had reſided in the *Spaniſh Weſt-Indies* for ſome time; but ſhall firſt deſcribe the Plant, with its manner of Growth, and how it may be propagated in the warm Parts of *America*.

The Plant which produces the Fruit called Vanilla, or Banilla, by the *Spaniards*, hath a trailing Stem, ſomewhat like common Ivy; which faſtens itſelf to whatever Tree grows near it, by ſmall Fibres, which are produc'd at every Joint, and faſten to the Bark of the Tree, by which the Plants are often nouriſh'd, when they are cut or broken off from the Root a conſiderable Height from the Ground, in like manner as the Ivy is often ſeen in *England*. The Leaves are as large as thoſe of the common Laurel, but are not quite ſo thick. Theſe are produc'd alternately at every Joint (which are ſix or ſeven Inches aſunder), and are of a lively green Colour on the upper Side, but are of a paler Green underneath, The Stem of theſe Plants ſhoots into many Branches, which faſten themſelves alſo to the Branches of the Trees; by which means they riſe to the Height of eighteen or twenty Feet, and ſpread quite over ſome of the ſmaller Trees, to which they are joined. The Flowers are of a greeniſh-yellow Colour, mixed with white; which, when fallen, are ſucceeded by the Fruit, which are ſix or ſeven Inches long.

This Sort, which is manufactur'd, grows not only in the *Bay of Campechy*, but alſo at *Carthagena*, at the *Caraccas*, *Honduras*, *Darien*, and *Cayan*; at all which Places, the Fruit are gather'd and preſerv'd; but is rarely found in any of the *Engliſh* Settlements in *America* at preſent; though it might be eaſily carried thither, and propagated; for the Shoots of theſe Plants are full of Juice; ſo may be eaſily tranſported; becauſe they will continue freſh out of the Ground for ſeveral Months. I had ſome Branches of this Plant, which were gather'd by Mr. *Robert Millar* at *Campechy*, and ſent over between Papers by way of Sample: theſe had been at leaſt four Months gather'd, when I receiv'd them; and upon opening the Papers, I found the Leaves rotten, with the Moiſture contain'd in them; and the Paper was alſo periſhed with it; but the Stems appear'd freſh: upon which I planted ſome of them in ſmall Pots, and plunged them into an Hot-bed of Tanners Bark; where they ſoon put out Leaves, and ſent forth Roots from their Joints: but as theſe Plants naturally faſten themſelves to the Stems of the Trees, it is with great Difficulty they are kept alive, when they have not this Aſſiſtance: therefore whoever would preſerve any of theſe Plants in *Europe*, ſhould plant them in Tubs of Earth, near the Stem of ſome vigorous *American* Tree, which requires a Stove, and can bear a great deal of Water; becauſe the Vanilla's muſt be plentifully watered in the Summer-ſeaſon, otherwiſe they will not thrive. They require alſo to be ſhaded from the Sun by Trees; ſo that if theſe are planted at the Foot of the *Hernandia*, or Jack-in-a-Box, whoſe Leaves are very large, and afford a good Shade, they will ſucceed better than when they are expoſed in ſingle Pots alone; and as theſe Plants require the ſame Degree of Heat in Winter, ſo they will agree well together.

When theſe Plants are deſign'd for Propagation in the warm Parts of *America*, there is nothing more required than to make Cuttings of about three or four Joints in Length, which ſhould be planted cloſe to the Stems of Trees, in low marſhy Places; and to keep down other troubleſome Plants; which, if permitted to grow about the Cuttings before they are well rooted, would overbear and deſtroy them: but after they are eſtabliſh'd, and have faſtened their Shoots to the Stems of the Trees, they are not in much Danger of being injured by neighbouring Plants; tho' when the Ground is kept clear from Weeds, the Plants will be much better nouriſh'd.

Theſe Plants do not produce Flowers until they are grown ſtrong; ſo that the Inhabitants affirm, That it is ſix or ſeven Years from the Planting to the time of their bearing Fruit: but when they begin to flower and fruit, they continue for ſeveral Years bearing, and this without any Culture; and as it is a Commodity which bears a good Price, it is well worth cultivating in ſeveral of the *Engliſh* Settlements, eſpecially as they will grow in moiſt woody Places, where the Land is not cleared from Timber.

The Method us'd to prepare the Fruit, is, when it turns of a yellow Colour, and begins to open, to gather it, and lay it in ſmall Heaps to ferment two or three Days, in the ſame manner as is practis'd for the Cocoa or Chocolate Pods: then they ſpread them in the Sun to dry; and when they are about half-dried, they flat them with their Hands, and afterwards rub them over with the Oil of *Palma Chriſti*, or of the *Cocoa*: then they expoſe them to the Sun again to dry; and afterward they rub them over with Oil a ſecond time; then they put them in ſmall Bundles, covering them with the Leaves of the *Indian* Reed, to preſerve them.

Theſe Plants produce but one Crop of Fruit in a Year, which is commonly ripe in *May*, fit for gathering; for they do not let them remain on the Plants to be perfectly mature, becauſe then they are not ſo fit for Uſe; but when they are about half changed yellow, they eſteem them better for keeping, than when they are changed to a dark-brown Colour; at which time the Fruit ſplits, and ſhews a great Quantity of ſmall Seeds, which are incloſ'd within it. While the Fruit is green, it affords no remarkable Scent; but as it ripens, it emits a moſt grateful aromatic Odour. When the Fruit begins to open, the Birds attack them, and devour all the Seeds very greedily; but do not eat any other Part of the Fruit.

The Fruit which are brought to *Europe*, are of a dark-brown Colour, about ſix Inches long, and ſcarce an Inch broad; and wrinkled on the Outſide, and full of a vaſt Number of black Seeds like Grains of Sand, of a pleaſant Smell, like Balſam of *Peru*.

This Fruit is only uſed in *England*, as an Ingredient in Chocolate, to which it gives a pleaſant Flavour: but the *Spaniſh* Phyſicians in *America* uſe it in Medicine, and eſteem it grateful to the Stomach and Brain, for expelling of Wind, to provoke Urine, to reſiſt Poiſon, and cure the Bite of venomous Animals.

As this Plant is ſo eaſily propagated by Cuttings, it is very ſtrange, that the Inhabitants of *America* ſhould neglect to cultivate it; eſpecially as it is an Ingredient in Chocolate, which is ſo much drunk all over *America*: but as the *Engliſh* have in a manner quite neglected the Culture of the Cocoa, it is no wonder they ſhould neglect this; ſince the former was cultivated in great Plenty by the *Spaniards* in *Jamaica*, while that Iſland remain'd in their Poſſeſſion; ſo that the *Engliſh* had an Example before them, if they would have followed it; whereas the Vanil was not found growing there; and therefore it is not to be ſuppoſed, that the Perſons who were ſo indolent, as to quit the Culture of many valuable Plants then growing on the Spot, ſhould be at the Trouble of introducing any new Plants.

VELLA, *Spaniſh* Creſs.

The *Characters* are;

It is a Plant with a croſs Flower, conſiſting of four Petals, included in a cylindrical four-leav'd Empalement: in the Centre of the Flower is ſituated the Pointal, attended by ſix Stamina, *four of which are longer than the other two: the Pointal afterward becomes a globular Pod, creſted at the Top, and opening in two Valves, having round Seeds incloſed.*

We have but one *Species* of this Plant; *viz.*

VELLA. *Lin. Hort. Cliff.* Wild *Spaniſh* Creſs, or, by ſome, *Spaniſh* wild Muſtard.

This is an annual Plant, which ſeldom grows more than one Foot high: the Stalk divides toward the Top into ſeveral Branches, each ending in a looſe Spike of Flowers, which are follow'd by round ſwelling Pods, having a leafy Border or Creſt on the Top, which is hollow'd like an Helmet: the Pod opens with Valves, and has two Cells, which contain roundiſh Seeds, like thoſe of Muſtard.

It is a Native of *Spain* and *Portugal*; and by thoſe who are curious in Botany, is preſerv'd in Gardens for the ſake of Variety; but as it is not beautiful, nor of any Uſe, it is ſeldom cultivated. If the Seeds of this Plant are permitted to ſcatter, the Plants will come up, and thrive very well; or if the Seeds are ſown in the Autumn, they will ſucceed much better than thoſe which are ſown in the Spring: for when the Seaſon proves dry, thoſe Seeds which are ſown in the Spring frequently lie in the Ground till the following Autumn, before the Plants appear; whereas thoſe which are ſown in the Autumn, always come up ſoon after, or early in the Spring; ſo will more certainly produce ripe Seeds. Theſe Plants ſhould not be tranſplanted; therefore the Seeds ſhould be ſown where the Plants are to remain.

VERATRUM, White Hellebore.

The *Characters* are;

The Flower is naked, conſiſting of

ſix Leaves, which expand in form of a Roſe; in the Middle of which ariſes the Pointal, ſurrounded by ſix Stamina, *or Threads, which afterward turns to a Fruit; in which, for the moſt part, three membranaceous Sheaths are gather'd into a little Head, and are full of oblong Seeds, reſembling a Grain of Wheat, and encompaſs'd, as it were, by a leafy Wing.*

The *Species* are

1. Veratrum *flore ſubviridi. Tourn.* White Hellebore, with a greeniſh Flower.

2. Veratrum *flore atro-rubente. Tourn.* White Hellebore, with a dark-red Flower.

The firſt of theſe Plants is that which is ordered for medicinal Uſe, and is by much the ſtronger and more acrid Plant; for when both Sorts are plac'd near each other, the Snails will intirely devour the Leaves of the ſecond Sort, when at the ſame time they ſcarcely touch thoſe of the firſt. The ſecond Sort doth alſo appear ſooner in the Spring, and flowers near a Month before the firſt Sort.

Theſe Plants are very pretty Ornaments, when planted in the Middle of open Borders of the Pleaſure-garden; for if they are placed near Hedges or Walls, where generally Snails harbour, they will greatly deface the Leaves, eſpecially of the ſecond Sort, by eating them full of Holes; and as a great Part of the Beauty of theſe Plants conſiſts in their broad-folded Leaves, ſo, when they are thus defac'd, the Pleaſure is almoſt loſt.

The Leaves of theſe Plants are very broad (eſpecially if the Ground is good where they grow), and are plaited ſomewhat reſembling thoſe of the Palms; but are of a much thinner Conſiſtence. From each Head of the Roots is generally produc'd a Flower-ſtem, about three Feet high, having a Spike of Flowers about a Foot in Length at their Top. The Flowers of the firſt Kind, being green, make not much Appearance; but thoſe of the ſecond, which are of a dark-red or purple Colour, are generally preferr'd by thoſe Perſons who cultivate them in the Pleaſure-garden.

They may be propagated by parting their Roots either in the Autumn, or toward the Latter-end of *February*, or the Beginning of *March*, juſt before they begin to ſhoot, and ſhould be planted in a freſh light Soil; in which they will thrive exceedingly, and produce ſtrong Spikes of Flowers. Theſe Roots ſhould not be remov'd oftener than once in three or four Years; by which time (if they like the Soil) they will be very ſtrong, and afford many Heads to be taken off; but if they are frequently tranſplanted, it will prevent their increaſing, and cauſe them to flower very weak.

You may alſo propagate theſe Plants by Seeds, which ſhould be ſown as ſoon as ripe, either in a Bed or Box fill'd with freſh light Earth, and the Ground kept conſtantly clear from Weeds. In the Spring the Plants will appear, at which time, if the Seaſon be dry, you ſhould now-and-then refreſh them with Water, which will greatly promote their Growth; and you muſt carefully clear them from Weeds, which, if permitted to grow, will ſoon overſpread and deſtroy theſe Plants while young. The Spring following, juſt before the Plants begin to ſhoot, you ſhould prepare a Bed of freſh light Earth, and carefully take up the young Plants (obſerving not to break their Roots), and plant them therein about ſix Inches ſquare, where they may remain until they are ſtrong enough to flower, when they ſhould be tranſplanted into the Borders of the Pleaſure-garden. But as theſe Plants ſeldom flower in leſs than four Years from Seeds, ſo this Method of propagating them is not very much practis'd in *England*.

VERBASCUM, Mullein.

The *Characters* are;

The Flower conſiſts of one Leaf, which expands in a circular Form, and is cut into ſeveral Segments: out of the Centre ariſes the Pointal, which afterward becomes an oval-pointed Fruit, divided into two Cells, by a middle Partition, which are filled with ſmall angular Seeds.

The *Species* are;

1. Verbascum *mas latifolium luteum. C. B. P.* Great white Mullein, High-taper, or Cows-lungwort.

2. Verbascum *pulverulentum, flore luteo parvo. J. B.* Hoary Mullein, with ſmall yellow Flowers.

3. Verbascum *flore albo parvo. J. B.* White flower'd Mullein.

4. Verbascum *nigrum, flore parvo, apicibus purpureis. J. B.* Sage-leav'd black Mullein.

5. Verbascum *blattariæ foliis, nigrum, amplioribus foliis ac luteis, apicibus purpuraſcentibus. Hort. L. Bat.* Mullein with a dark Moth-mullein-leaf, and yellow Flowers with purpliſh *Apices*.

6. Verbascum *nigrum, folio papaveris corniculati. C. B. P.* Black Mullein, with an Horn-poppy-leaf.

7. Verbascum *fœmina, flore luteo magno. C. B. P.* Female Mullein, with a large yellow Flower.

8. Verbascum *anguſtifolium ramoſum, flore aureo, folio craſſiore. J. B.* Branching narrow-leav'd Mullein, with a golden Flower, and a thicker Leaf.

9. Verbascum *foliis viridibus, annuum, floribus luteis. H. L.* Annual Mullein, with green Leaves, and yellow Flowers.

10. Verbascum *nigrum Dioſcoridis. Lob. Icon.* Black Mullein of *Dioſcorides*.

11. Verbascum *Alpinum perenne nigrum, flore albo, ſtaminibus purpureis. H. R. Par.* Black perennial Mullein of the *Alps*, with a white Flower, and purple Chives.

12. Verbascum *ramoſum, floribus albis parvis. Mor. H. R. Blæſ.* Branching Mullein, with ſmall white Flowers.

13. Verbascum *Creticum ſpinoſum fruteſcens. Tourn. Cor.* Shrubby and thorny Mullein of *Crete*.

14. Verbascum *Græcum fruticoſum, folio ſinuato candidiſſimo. Tourn. Cor.* Shrubby Mullein of *Greece*, with a very white indented Leaf.

15. Verbascum *Orientale maximum candidiſſimum, ramis candelabrum æmulantibus. Tourn. Cor.* The greateſt and whiteſt Eaſtern Mullein, with Branches reſembling a Candleſtick.

16. Verbascum *Orientale, conyzæ folio, flore micante, e ferrugineo ad aureum colorem vergente. Tourn. Cor.* Eaſtern Mullein, with a Fleabane-leaf, and a ſhining Flower, from an iron inclining to a gold Colour.

17. Verbascum *Orientale, betonicæ folio, flore magno. Tourn. Cor.* Eaſtern Mullein, with a Betony-leaf, and a larger Flower.

18. Verbascum *Orientale, anguſto oblongo folio. Tourn. Cor.* Eaſtern Mullein, with an oblong and narrow Leaf.

19. Verbascum *Orientale, foliis ſubrotundis candidiſſimis. Tourn. Cor.* Eaſtern Mullein, with roundiſh white Leaves.

The four firſt Sorts grow wild in divers Parts of *England*, and are rarely cultivated, except in Botanic Gardens for Variety. The firſt Sort is that which is us'd in Medicine, which is the moſt common of them all, growing upon the Sides of dry Banks, in moſt Parts of *England*.

Theſe may be all cultivated by ſowing their Seeds in *Auguſt*, on a Bed of light Earth, in an open Situaation, where the Plants will come up the ſucceeding Month, and will endure the Winter's Cold very well, provided they have a dry Soil. In *February* the Plants ſhould be tranſplanted where they are to remain, allowing them a greater Diſtance; for they grow pretty tall and large: in *June* following they will flower, and their Seeds will be ripe in *July*. But notwithſtanding theſe Plants grow wild in *England*, yet two or three of each Kind may be admitted in large Gardens, for the Variety of their hoary Leaves, together with the extreme Sweetneſs of their Flowers, which have a Scent ſomewhat like Violets.

The fifth, ſixth, and ſeventh Sorts are not Natives of this Country, but have been obtained from abroad: the fifth was ſent from *Leyden*, by the learned Dr. *Boerhaave*; but I don't know at preſent from whence he receiv'd it. The ſixth Sort was gather'd by my ingenious Friend Mr. *Heury Hopkey*, upon *Gibraltar* Hills, from whence he ſent me the Seeds; which flouriſh'd in the Phyſic-garden very well two Years, and flower'd extremely, but did not perfect Seeds; and, being a biennial Plant, is ſince intirely decay'd.

The ſeventh, eighth, ninth, tenth, eleventh, and twelfth Sorts grow wild in ſeveral Parts of *Europe*; and theſe are preſerv'd in ſeveral Botanic Gardens for the ſake of Variety, and are rarely admitted into other Gardens. But yet where there is room to admit of Plants which grow tall, a few of each of theſe Sorts ſhould have a Place; ſince, by their odd Appearance, they will add to the Variety; and their Flowers, having an agreeable ſweet Scent, will perfume the Air of the Garden.

The ſeven next mention'd Sorts were diſcover'd by Dr. *Tournefort* in the *Levant*, from whence he ſent their Seeds to the Royal Garden at *Paris*. All theſe Sorts are hardy enough to thrive in the open Air in *England*, provided they are ſown on a dry undung'd Soil; for when they grow on a moiſt Soil, their Roots are ſubject to rot in Winter; and if the Ground is enriched with Dung, it cauſes the Plants to grow ſo rank in Autumn, that they are in Danger of being deſtroyed by hard Froſt.

All theſe Plants are propagated by Seeds, which ſhould be ſown on a Bed of freſh light Earth, in an open Situation. The beſt time to ſow theſe Seeds is in Autumn, ſoon after they are ripe; when they will more certainly grow, than if they are ſown in the Spring: and when they are ſown early in the Autumn, the Plants will flower the following Summer, by which there will be a Year ſav'd. Theſe Seeds ſhould be ſown in Drills, which ſhould be made about eighteen Inches aſunder; becauſe it will be proper to let ſome of the Plants remain to flower in the Seed-bed, where they will grow much ſtronger than thoſe which are tranſplanted: when the Plants come up, they ſhould be kept clean from Weeds; and about *Michaelmas*, ſome of the Plants ſhould be carefully drawn out, where they grow too cloſe together, which may be tranſplanted out into a Nurſery-bed to get Strength; and afterward they may be removed, and planted about in Wilderneſs-quarters; where (if they are not too much overſhaded by Trees) they will thrive and flower very well, and make an agreeable Variety. Thoſe Plants which are left in the Seed-beds to flower, ſhould be ſingled out to a Foot or more Diſtance in the Rows; otherwiſe they will not have room to ſpread.

VERBENA, Vervain.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, whoſe Upper-lip is upright, and commonly divided into two; but the Under-lip is cut into three Parts; ſo that at the firſt Sight it appears like a Flower with five Leaves: theſe Flowers are each ſucceeded by four naked Seeds, which fill the Calyx: *to which may be added, The Flowers generally grow in Spikes or Heads, but not in Wherles round the Stalks.*

The *Species* are;

1. VERBENA *communis, cæruleo flore. C. B. P.* Common Vervain, with a blue Flower.
2. VERBENA *Luſitanica latifolia procerior. Tourn.* Taller broad-leav'd *Portugal* Vervain.
3. VERBENA *urticæ folio, Canadenſis. H. R. Par. Canada* Nettle-leav'd Vervain.
4. VERBENA *Americana, ſpica multiplici, foliis urticæ anguſtioribus, floribus cæruleis. Par. Bat. Prod. American* Vervain, with many Spikes, narrow Nettle-leaves, and blue Flowers.
5. VERBENA *tenuifolia. C. B. P.* Narrow-leav'd Vervain.
6. VERBENA *urticæ folio longiore ſerrato. Houſt. American* Vervain, with a longer ſawed Nettle-leaf.
7. VERBENA *Bonarienſis altiſſima, lavendulæ Canarienſis ſpica multiplici. Hort. Elth.* The talleſt Vervain of *Buenos Ayres*, with many Spikes reſembling the *Canary* Lavender.
8. VERBENA *Carolinienſis, meliſſæ folio aſpero. Hort. Elth. Carolina* Vervain, with a rough Balm-leaf.
9. VERBENA *Mexicana, trachelii folio, fructu aparines. Hort. Elth. Mexican* Vervain, with a Throatwort-leaf, and a Fruit like Gooſegraſs.

The firſt Sort here mention'd is very common on the Side of Roads and Foot-paths, near Habitations; for although there is ſcarce any Part of *England*, in which this Plant is not found in Plenty, yet it is never found growing above a Quarter of a Mile from an Habitation; which occaſion'd its being call'd *Simplers Joy*; becauſe, where-ever they found this Plant growing, it was a ſure Token of an Houſe being near. This is rarely cultivated in Gardens; but is the Sort directed by the College of Phyſicians for medicinal Uſe; and is brought to the Markets by thoſe who gather it in the Fields.

The next five Sorts, tho' not Natives of this Country, yet are very hardy, and will endure the ſharpeſt of our Winters in the open Air.

Theſe may all be propagated by ſowing their Seeds on a Bed of freſh Earth in the Spring; and when the Plants come up, they ſhould be tranſplanted out, or thinned ſo as to allow them ten or twelve Inches Diſtance (for they generally grow pretty large, and require to have room); after which they will require no farther Care, but to clear them from Weeds, and the ſecond Summer they will flower and ſeed; which Seeds, if permitted to fall upon the Ground, will come up the ſucceeding Spring, without any farther Culture.

The ſixth Sort was diſcover'd by

the late Dr. *William Houſtoun* in *Jamaica*, from whence he ſent the Seeds into *England*. This is a biennial Plant, which commonly periſhes ſoon after it has perfected its Seeds.

The ſeventh Sort was brought from *Buenos Ayres*. This Plant grows to the Height of five or ſix Feet, or more, and produces its Flowers at the Extremity of the Branches in many ſlender Spikes, which are plac'd cloſe together, ſomewhat like the *Canary* Lavender. Theſe Flowers are ſmall, and of a blue Colour.

The eighth Sort is a Native of *Carolina*. This is a much humbler Plant; ſeldom riſing above two Feet and an half high. This produces its Flowers in Spikes like the common Sort.

The ninth Sort was brought from *Mexico*. This commonly grows about three Feet high, or more; and generally produces three Spikes from a Joint at the Extremity of the Branches. The Flowers are Male and Female on the ſame Spike. The Female Flowers produce their Seeds cover'd with the Empalement, which ſwells into a roundiſh Form, ſo as to appear ſomewhat like the Seeds of Gooſe-graſs or Clivers.

The ſixth, ſeventh, and eighth Sorts are tender Plants, which may be propagated by Seeds, and ſhould be ſown on an Hot-bed early in the Spring; but when the Plants are come up, they muſt have a good Share of free Air admitted to them in warm Weather; otherwiſe they will draw up too weak: they muſt alſo be often refreſh'd with Water. When the Plants have obtain'd ſome Strength, they ſhould be tranſplanted on another moderate Hot-bed, obſerving to ſhade them until they have taken new Root; after which time they muſt have Air and Moiſture in warm Weather in great Plenty; which will ſtrengthen the Plants. About the Beginning of *June*, they ſhould be carefully taken up with Balls of Earth to their Roots, and planted into Pots filled with freſh light Earth, and then plunged into a very moderate Hot-bed, where they ſhould be ſcreened from the Sun until they have taken new Root; afterward they ſhould be enured to the open Air by degrees; for in *July* they may be remov'd out of the Hot-bed, and plac'd in a warm-ſhelter'd Situation, where they may remain till the Middle or Latter-end of *September*, when they muſt be removed into the Stove; where, if they have a moderate Degree of Warmth in Winter, and are duly ſupply'd with Water, the Plants may be preſerv'd, and the following Summer they will produce Flowers; and if the Seaſon proves favourable, they will perfect their Seeds in Autumn.

The eighth Sort is much more hardy than thoſe laſt-mention'd, and may be ſown on a Bed of light Earth in a warm Situation, about the Middle of *March*; and when the Plants are come up, they muſt be conſtantly kept clean from Weeds, until they are ſtrong enough to tranſplant; when they muſt be carefully taken up, and ſome of them planted into ſmall Pots filled with freſh light Earth, and plac'd in a ſhady Situation, until they have taken new Root: then they may be plac'd in an open Situation with other hardy Exotic Plants, where they may remain during the Summer-ſeaſon; but in Winter they muſt be ſhelter'd from ſevere Froſt. The other Plants may be planted in a warm Border, where they will endure the Cold of our ordinary Winters without Covering; but in hard Winters theſe are ſometimes deſtroyed: for which

Reaſon, it will be proper to have ſome of the Plants in Pots, in order to preſerve the Kind. This Sort flowers, and produces good Seeds, in this Country; but the Roots ſeldom continue above two or three Years.

VERGE is the Edge or Outſide of a Border; but in Gardening it is generally underſtood to be a Slip of Graſs which joins to Gravel-walks, and divides them from the Borders in the Parterre-garden.

VERONICA, Speedwell, or Fluellin.

The *Characters* are;

The Leaves, for the moſt part, grow oppoſite by Pairs: the Calyx *conſiſts of one Leaf, which is divided into four Parts, and expands in form of a Star: the Flower conſiſts of one Leaf, which is, for the moſt part, divided into four Segments, and expands in a circular Order: when the Flower decays, the Ovary becomes a membranaceous Fruit, divided into two Cells, which are ſhaped like an Heart, and are filled with Seeds, which are ſometimes ſmall, and at other times large and thick.*

The *Species* are;

1. Veronica *mas ſupina & vulgatiſſima. C. B. P.* Common Male Speedwell, or Fluellin.

2 Veronica *ſpicata anguſtifolia. C. B. P.* Narrow-leav'd ſpik'd Speedwell.

3. Veronica *major latifolia erecta. Mor. Hiſt.* Greater broad-leav'd upright Speedwell.

4. Veronica *multicaulis Pannonica. Tourn.* *Hungarian* Speedwell, bearing many Stalks or Spikes of Flowers.

5. Veronica *ſpicata Cambro-Britannica, bugulæ ſubhirſuto folio. Raii Syn. Edit.* 3. *Welſh* ſpiked Speedwell, with an hairy Bugle-leaf.

6. Veronica *cærulea, triſido aut quinqueſido folio. Flor. Bat.* Blue Speedwell, with a trifid or quinquefid Leaf.

7. Veronica *Virginiana altiſſima, ſpica multiplici, floribus candidis. Flor. Bat.* Tall *Virginian* Speedwell, with many Spikes, and white Flowers.

8. Veronica *ſpicata longifolia. Tourn.* Long-leav'd ſpik'd Speedwell.

9. Veronica *petræa ſempervirens. Pon. Bald.* Ever-green Rock Speedwell.

10. Veronica *mas repens Pyrenaica, folio longiori glabro. Schol. Bot.* Male creeping *Pyrenean* Speedwell, with a longer ſmooth Leaf.

11. Veronica *mas erecta. C. B. P.* Male upright Speedwell.

12. Veronica *ſpicata minor. C. B. P.* Smaller ſpiked Speedwell.

13. Veronica *Alpina fruticans, ſerpylli minoris folio circinato. Pluk. Phyt.* Shrubby Speedwell of the *Alps*, with a round leſſer Mother-of-thyme-leaf.

14. Veronica *fruteſcens durior, oblongo chamædryos folio, Patavina. Bocc. Muſ.* Harder ſhrubby Speedwell of *Padua*, with an oblong Germander-leaf.

15. Veronica *Auſtriaca, foliis tenuiſſime laciniatis. Inſt. R. H.* *Auſtrian* Speedwell, with Leaves finely jagged.

16. Veronica *maxima. Lugd.* The greateſt Speedwell, or falſe Germander.

17. Veronica *major fruteſcens altera. Mor. Hiſt.* Another greater ſhrubby Speedwell, or falſe Germander.

18. Veronica *ſupina, facie teucrii pratenſis. Lob. Icon.* Low Speedwell, with the Face of Meadow-germander.

19. VERONICA *longifolia Virginiana altiſſima, foliis ternis profunde ſerratis caulem amplexantibus, ſpica multiplici cærulea. Royen.* The talleſt long-leav'd *Virginian* Speedwell, with deeply-ſawed Leaves embraceing the Stalks, and many Spikes of blue Flowers.

20. VERONICA *minor anguſtifolia ramoſior & procumbens. Mor. Hiſt. Oxon.* Small narrow-leav'd branching and trailing Speedwell.

21. VERONICA *aquatica major, folio ſubrotundo. Mor. Hiſt.* Greater Water Speedwell, with a roundiſh Leaf; commonly call'd Brook-lime.

22. VERONICA *aquatica, anguſtiore folio. Inſt. R.H.* Narrow-leav'd Water Speedwell, or Brooklime.

23. VERONICA *aquatica minor, folio ſubrotundo. Inſt. R. H.* Leſſer Water Speedwell, with a roundiſh Leaf.

24. VERONICA *aquatica major, folio oblongo. Mor. Hiſt.* Greater Water Speedwell, or Brooklime, with an oblong Leaf.

25. VERONICA *aquatica minor, folio oblongo. Mor. Hiſt.* Small Water Speedwell, with an oblong Leaf.

26. VERONICA *Conſtantinopolitana incana, chamædryos folio. Tourn. Cor.* Hoary Speedwell of *Conſtantinople*, with a Germander-leaf.

27. VERONICA *Orientalis, foliis hederæ terreſtris, flore magno. Tourn. Cor.* Eaſtern Speedwell, with Ground-ivy-leaves, and a large Flower.

28. VERONICA *Orientalis erecta, gentianellæ foliis. Tourn. Cor.* Upright Eaſtern Speedwell, with ſmall Gentian-leaves.

29. VERONICA *Orientalis elatior, gentianellæ foliis, flore majore albido. Tourn.* Taller Eaſtern Speedwell, with ſmall Gentian-leaves, and a larger white Flower.

30. VERONICA *Orientalis minima, foliis laciniatis. Tourn. Cor.* The leaſt Eaſtern Speedwell, with jagged Leaves.

31. VERONICA *Orientalis, telephii folio. Tourn. Cor.* Eaſtern Speedwell, with an Orpine-leaf.

32. VERONICA *major fruteſcens altera, foliis conſtanter & eleganter variegatis. Boerh. Ind. alt.* The other great ſhrubby Speedwell, with Leaves conſtantly and beautifully variegated.

33. VERONICA *Americana erecta, foliis gramineis, floribus ex foliorum alis. Houſt.* Upright *American* Speedwell, with Graſs-leaves, and Flowers coming out of the Wings of the Leaves.

The firſt Sort grows wild in Woods, and other ſhady Places, in divers Parts of *England*, and is a Plant of little Beauty; but as it is the Sort which is us'd in Medicine, under the Title of *Paul's Betony*, I thought it not amiſs to ſet it down here. This is generally brought to Market by ſuch Perſons as make it their Buſineſs to gather Herbs in the Fields to ſupply the ſame, ſo that it is not often cultivated in Gardens; but thoſe who have a mind to propagate it, may do it with much Eaſe; for as the Branches trail upon the Ground, they puſh out Roots from their Joints; which Branches, being cut off, and planted, will take Root, and grow in almoſt any Soil or Situation.

The ſecond, third, and fourth Sorts are very ornamental Plants in the large Borders of the Flower-garden; particularly the fourth, which produces a great Number of Spikes of beautiful blue Flowers. The ſeveral Sorts continue flowering at leaſt two Months, and in cool moiſt Seaſons much longer; and theſe Flowers are very proper to cut for

Baſins or Flower-pots to adorn Rooms in the Summer-ſeaſon.

The fifth Sort is a Native of the Mountains in *Wales*, from whence it hath been tranſplanted into many curious Gardens. It alſo grows on the *Alps* and *Pyrenees*. This produces fine large Spikes of blue Flowers, and deſerves a Place in every Garden.

The ſixth, ſeventh, eighth, and ninth Sorts are Natives of warmer Countries than *England*; but are hardy enough to endure the Cold of our Winters very well, provided they are planted in a dry Soil. Theſe are all pretty Varieties, and ſucceed each other in Flowering; which renders them worthy of a Place in every curious Garden. Theſe ſhould all be planted in the Middle of the Borders of the Pleaſure-garden (except the fifth and ninth, which ſeldom grow above a Foot high, and ſo are better plac'd amongſt Flowers of the ſame Growth), where, being intermix'd with other Flowers, they afford an agreeable Variety.

The tenth Sort grows wild upon the *Alps*, and *Pyrenean* Mountains This is a low trailing Plant, ſomewhat like the firſt Sort; but the Leaves are longer and ſmoother. The Flowers of this Sort having little Beauty, the Plants are rarely cultivated but in Botanic Gardens.

The eleventh Sort is very like the ſecond; from which it differs in having broader Leaves, and is a lower Plant.

Thet welfth Sort is much ſmaller than the eleventh; but the Spikes of Flowers being of a fine blue Colour, and continuing long in Beauty, render it worthy of a Place in the Flower-garden.

The thirteenth Sort is a low ſhrubby Plant, ſomewhat like the ninth; but the Leaves are ſmaller: there is but little Beauty in this Plant.

The fourteenth, ſixteenth, ſeventeenth, and eighteenth Sorts are like the fourth Sort; but the Spikes of Flowers are not ſo beautiful: theſe come later to flower, and continue much longer in Beauty.

The fifteenth Sort hath fine cut Leaves, in which it differs from theſe laſt; but the Flowers are very like thoſe of the fourteenth Sort.

The nineteenth Sort grows much taller than either of the other; the Flowers are produc'd on long Spikes, which come out many together from the Top of each Stalk, and are of a fine blue Colour. This flowers in *July*; and if the Seaſon proves cool, the Flowers will continue moſt Part of *Auguſt*.

The twentieth Sort is a Plant of no great Beauty, being very like the common Speedwell with Germander-leaves; ſo is ſeldom preſerv'd in Gardens.

The twenty-firſt, twenty-ſecond, twenty-third, and twenty-fourth Sorts are aquatic Plants, growing on the Sides of Ditches and Standing-waters in many Parts of *England*; ſo are not kept in Gardens. The twenty-firſt Sort is us'd in Medicine as an Antiſcorbutic, and ſtands in the Diſpenſary under the Title of *Anagallis aquatica*, or *Becabunga*.

The twenty-ſixth Sort hath white woolly Leaves, which are a little ſawed on their Edges; the Flowers are produc'd in fine long Spikes, which are of a fine blue Colour; and the Plant doth not ſpread ſo much as many of the other Sorts; ſo deſerves a Place in every good Garden. This flowers in *July* and *Auguſt*.

The thirtieth Sort is an humble Plant, with fine cut Leaves, and has the Appearance of the fifteenth Sort; but the Plant is much ſmaller, and the Leaves are more cut. This flowers in *May*.

The twenty-ſeventh, twenty-eighth, twenty-ninth, and thirty-firſt Sorts were diſcover'd by Dr. *Tournefort* in the *Levant*, and are rare in *England* at preſent. Theſe are preſerv'd in ſome curious Botanic Gardens for Variety; but are not ſo beautiful as many of the Sorts here named.

There are ſome more Species of this Genus, than are here enumerated; moſt of which are annual Plants, which have no Beauty: I have therefore omitted them, as they are ſeldom admitted to have a Place in Gardens.

The thirty-ſecond Sort is preſerved in ſome Gardens, for its variegated Leaves; but it is the ſame with the ſeventeenth Sort.

The laſt Sort is a Native of the warmeſt Parts of *America*; therefore is too tender to live in *England*, unleſs it is preſerv'd in a warm Stove; but as it has little Beauty, it is rarely preſerv'd in the Gardens, unleſs for the ſake of Variety.

Moſt of the Sorts before-mention'd deſerve to have room in large Gardens; where, if they are planted in a ſhady Border, they will continue a long time in Flower; and as the Sorts ſucceed each other, ſo, where they are rightly plac'd, they will make an handſome Appearance during moſt of the Summer-months: for ſome of the Sorts begin to flower in *April*, others in *May*, ſome in *June* and *July*, and continue great Part of *Auguſt*: and as they require but little Care to cultivate them, being extreme hardy, growing upon any Soil, or in any Situation, they better deſerve room in a Garden than many other Plants, which are more eſteem'd for being rare, than for their Beauty or Uſe.

Theſe Plants may all be propagated by parting their Roots, which may be done every third Year; for if they are too often parted, or divided into ſmall Heads, they will not make any Figure; becauſe when they have not a Number of Stems, ſo as to form a good Bunch, they are ſoon paſt their Beauty, and have but a mean Appearance. The beſt time to part theſe Roots is at *Michaelmas*, that they may be well rooted again before Winter; for when they are remov'd in the Spring, they ſeldom flower ſtrong the ſame Year, eſpecially if the Seaſon ſhould prove dry. Thoſe Sorts which grow pretty tall, are very proper to plant under large Trees, in open Wilderneſs-quarters: but thoſe with trailing Branches are fit for the Sides of Banks, or irregular ſhady Slopes, where they will make an agreeable Variety.

I cannot omit mentioning the Virtues of the common Speedwell, which have cauſed it to be in great Requeſt of late. It is found an excellent Remedy for the *Gout*, and all Rheumatic Diſorders. The Method is, to make a Tea of the dried Herb: the Quantity to be us'd is about a Quarter of an Ounce, from which four common Diſhes of Tea may be drawn: theſe are to be drunk every Morning, until the Patient finds Relief. To this ſome add the dried Herbs of Bog-bean and Ground-pine, which they mix in equal Quantities, and make a Tea of them; from which many Perſons have received great Benefit.

VIBURNUM, The Wayfaring, or Pliant Mealy-tree.

The *Characters* are;

The Flower conſiſts of one Leaf, which is divided into five Parts, and expands in a circular Order; theſe *are collected into the Form of an Umbrella: the Ovary, which is placed in the Upper-part of the Flower, becomes a ſoft Berry, full of Juice, which contains one ſtony, compreſs'd, furrowed Seed.*

The *Species* are;

1. VIBURNUM. *Matth.* The common Viburnum, or Pliant Mealy-tree.

2. VIBURNUM *folio variegato.* The common Viburnum, with ſtriped Leaves.

3. VIBURNUM *foliis ſubrotundis ſerratis glabris. Flor. Virg. American* Viburnum, with roundiſh ſmooth ſawed Leaves, commonly called The Black Haw.

4. VIBURNUM *Americanum, ampliſſimo folio candidiſſimo, floribus in umbella candidis. Dale. American* Viburnum with large white Leaves, and white Flowers growing in an Umbel.

5. VIBURNUM *Americanum latifolium, floribus in umbella candidis, maculis rubris adſperſis, ramulis tomentoſis.* Broad-leav'd *American* Viburnum, with white Flowers growing in an Umbel, which are ſpotted with red, and the Branches very woolly.

The firſt of theſe Trees is very common in divers Parts of *England*, particularly in *Kent*, where it grows in moſt of the Hedges upon the dry chalky Hills near *Graveſend*, *Rocheſter*, &c. in very great Plenty. But notwithſtanding its being thus common, yet it deſerves a Place in ſmall Wilderneſs-quarters, among other flowering Trees; where, by its mealy Leaves and Shoots, together with its large Bunches of white Flowers in the Spring, which are ſucceeded by red Berries in Autumn, it affords an agreeable Variety.

This Tree may be propagated either from Seeds, or by laying down the tender Branches; but the former Method, being tedious, is ſeldom practis'd; eſpecially ſince young Plants may be taken from the Woods or Hedges, where there are many of the old Trees growing, from which a Number may ſoon be propagated.

The beſt time for laying theſe Branches is in Autumn, juſt as the Leaves begin to fall (the manner of laying them, being the ſame as for other hardy Trees, need not be here repeated). By the ſucceeding Autumn the Layers will be rooted, when you may take them off from the old Plants, and tranſplant them into a Nurſery for two or three Years, in which they may be trained up to regular Stems and Heads, and may afterward be planted where they are to remain. This Tree commonly grows about twelve or fourteen Feet high; but it is rarely ſeen above ſixteen or eighteen; ſo that it ſhould be planted in Lines with ſuch Trees as do not exceed this Growth: otherwiſe it will be hid thereby, and their Beauty loſt.

The ſtriped Sort may be propagated by inarching it upon the plain Sort. This is preſerv'd by ſuch as delight in variegated Plants; but there is no great Beauty in it. Theſe Trees ſeldom grow near ſo large as thoſe of the plain Sort; as is the Caſe of all other ſtrip'd Plants.

The third Sort has been introduc'd into the *Engliſh* Gardens from *North-America*, and is now pretty commonly cultivated in ſome of the Nurſeries near *London*, by the Title of Black Haw; which is the Name it was brought by from *America*.

This is a regular growing Shrub, which riſes to the Height of ten or twelve Feet: the Branches are produc'd oppoſite, as are alſo the Leaves; which are of a deep-green Colour, and intire, having their

Edges ſlightly ſawed. The Flowers are produc'd in ſmall Umbels, at the Extremity of the Branches, which are white. Theſe are ſucceeded by ſoft ſucculent Berries, which, when ripe, are of a dark-purple Colour.

It is very hardy, ſo endures the Cold of our Winters very well, and grows in any Soil; but muſt not be too much expos'd to ſtrong Winds, which are apt to ſplit down the Branches, and render the Shrubs very unſightly. This may be propagated by laying down the Branches, in the ſame manner as hath been directed for the common Sort.

The fourth Sort has much the Appearance of the common Viburnum; but the Leaves are larger, and are very mealy on both Sides: the Shoots are alſo more woolly. I receiv'd the Seeds of this Sort from *South-Carolina*, which were ſent me by my late Friend Dr. *Thomas Dale*.

This Sort is hardy enough to live in the open Air in *England*, if it is planted in a warm-ſhelter'd Situation. It delights in a moiſt light Soil, in which it thrives much better than upon a dry gravelly Ground; for it grows naturally upon ſwampy Land in *America*. But the beſt way is, not to plant theſe into the full Ground, until they have obtain'd Strength to reſiſt the Cold; ſo that when the Plants are rais'd from Seeds, they ſhould be kept in Pots, and in Winter plac'd under a common Hot-bed-frame; where they ſhould have as much free Air as poſſible in mild Weather, and only be ſhelter'd from hard Froſt. After two Years Growth from Seeds, the Plants will be ſtrong enough to tranſplant into the Ground, which ſhould be done in the Spring of the Year; ſhaking the Plants out othe Pots, and preſerving a Ball of Earth to their Roots, which will ſecure the Plants from Hazard; and if the Spring ſhould prove dry, it will be proper to water them until their Roots are well eſtabliſh'd in the Ground; after which time they will require no other Care than what is uſually beſtow'd on other flowering Shrubs.

It may be propagated by laying down of the Branches, in the ſame manner as the common Viburnum; but this ſhould not be practis'd until the Shrubs have gotten ſufficient Strength; and when the Layers are laid, if the Seaſon ſhould prove dry, it will be of great Service in promoteing their taking Root, if they are duly water'd.

The fifth Sort is very tender. The Seeds of this Kind were ſent from *Campechy* by Mr. *Robert Millar*, who found the Plants growing in low marſhy Places in great Plenty. This Sort riſes to the Height of eight or ten Feet, and has broader Leaves than the common Sort, which are (while young) cover'd pretty thick with a ſoft white Down; but as the Leaves grow older, their Upperſides are greener, and loſe moſt of the Down. The young Branches are alſo very woolly; but as theſe grow older, it falls off. The Flowers are produc'd from the Wings of the Leaves in large Bunches, which are white; but the *Apices* or Summits are of a red Colour, which, at a ſmall Diſtance, appear like Stripes in the Flowers. After the Flowers are decayed, the Fruit appears white; when ripe, turns black.

This Plant may be propagated by Seeds, which ſhould be ſown on an Hot-bed early in the Spring; and when the Plants are come up, and fit to tranſplant, they ſhould be each planted into a ſeparate ſmall Pot fill'd with light rich Earth, and then plung'd into an Hot-bed of Tanners

Bark; obſerving to ſhade them from the Sun until they have taken new Root, when they ſhould have free Air admitted to them every Day in proportion to the Warmth of the Seaſon; and as they are Plants which delight in low marſhy Places, they muſt be conſtantly ſupplied with Water in hot Weather, otherwiſe they will not thrive. At *Michaelmas* they ſhould be remov'd out of the Hot-bed, and plung'd into the Bark-bed in the Stove; where they ſhould be kept in a moderate Temperature of Heat, and muſt be frequently watered; in which Stove they will retain their Leaves all the Year, and make conſiderable Progreſs; ſo that in two Years from ſowing, they will produce Flowers and Fruit.

As theſe Plants grow older and ſtronger, they may be treated more hardily; therefore they may be placed in a dry Stove in Winter, and in the Middle of Summer may be expos'd abroad in a warm-ſhelter'd Situation, with other tender Exotic Plants; obſerving in dry Weather to water them duly, and to ſhift them into other Pots, as they ſhall require it. With this Management they will produce their Flowers every Year, toward the End of Summer; and if the Autumn proves very favourable, or the Plants are early remov'd into the Stove, they will perfect their Seeds very well.

This Sort may alſo be propagated by Layers, as the other; but when the Shoots are laid down, it will be proper to plunge the Pots into a moderate Hot bed of Tanners Bark, which will cauſe them to put out Roots much ſooner than when they are expos'd abroad. The Layers, when ſufficiently rooted, may be taken off, and planted into ſeparate Pots, and treated in the ſame manner as the ſeedling Plants.

VICIA, Vetch.

The *Characters* are;

It hath a papilionaceous Flower, out of whoſe Empalement ariſes the Pointal, which afterward becomes a Pod full of roundiſh or angular Seeds: to which muſt be added, The Leaves grow as it were by Pairs, on a Middle-rib ending in a Tendril.

The *Species* are;

1. VICIA *ſativa vulgaris, ſemine nigro. C. B. P.* Common Vetch or Tare.

2. VICIA *ſativa alba. C. B. P.* White Vetch or Tare.

3. VICIA *ſupina, latiſſimo folio non ſerrato. Tourn.* Low Vetch, with a broad Leaf not ſerrated.

4. VICIA *ſupina, latiſſimo folio ſerrato. Tourn.* Low Vetch, with a broad ſerrated Leaf.

5. VICIA *multiflora. C. B. P.* Many-flower'd Vetch.

6. VICIA *maxima dumetorum. C. B. P.* Buſh or perennial Vetch.

7. VICIA *ſepium, folio rotundiore acuto, ſemine nigro. C. B. P.* Buſh Vetch, with a rounder ſharp-pointed Leaf, and a black Seed.

8. VICIA *vulgaris, acutiore folio, ſemine parvo nigro. C. B. P.* Wild Vetch, with a ſharper-pointed Leaf, and a ſmall black Seed.

9 VICIA *perennis incana multiflora. Bot. Monſp.* Hoary perennial Vetch, with many Flowers.

10. VICIA *perennis multiflora, majori flore cæruleo, ex albo mixto. Bot. Monſp.* Tufted perennial Vetch, with a large blue Flower mix'd with White.

11. VICIA *perennis multiflora incana, inſularum Stæchadum. Inſt. R. H.* Perennial hoary tufted Vetch of the *Stæchades*.

12. VICIA *ſylveſtris hirſuta incana.*

na. C. B. P. Hoary rough wild Vetch.

13. VICIA *ſylveſtris incana, major & præcox, Pariſienſis, flore ſuave-rubente. Inſt. R. H.* The greater early hoary wild Vetch, with a ſoft red Flower.

14. VICIA *ſylvatica maxima, piſo ſylveſtri ſimilis. J. B.* The greateſt wild Vetch, reſembling wild Peas.

15. VICIA *ſylveſtris lutea, ſiliqua hirſuta. C. B. P.* Wild yellow Vetch, with hairy Pods.

16. VICIA *ſerotina perennis, flore luteo, ſiliqua hirſuta. Inſt. R. H.* Late-flowering perennial Vetch, with a yellow Flower, and an hairy Pod.

17. VICIA *ſerotina perennis, flore luteo, ſiliqua glabra. Inſt. R. H.* Late-flowering perennial Vetch, with a yellow Flower, and ſmoother Pod.

18. VICIA *ſylveſtris lutea, cum galea fuſca. J. B.* Wild yellow Vetch, with a brown Standard.

19. VICIA *Cretica multiflora latifolia, flore intenſe purpureo. Tourn. Cor.* Broad-leav'd many-flower'd Vetch of *Crete*, with a deep-purple Flower.

20. VICIA *Orientalis multiflora incana, anguſtiſſimo folio. Tourn. Cor.* Hoary Eaſtern tufted Vetch, with a very narrow Leaf.

21. VICIA *verna villoſiſſima & incana. flore parvo ſpicato, ex purpureo ad ianthinum vergente. Tourn. Cor.* The moſt hairy and hoary Spring Vetch, with a ſmall ſpiked Flower, from a purple to a violet Colour.

22. VICIA *multiflora ſpicata. floribus albidis, calyce purpureo. Tourn. Cor.* Spiked tufted Vetch, with whitiſh Flowers, and a purple Empalement.

23. VICIA *Orientalis multiflora argentea, flore variegato. Tourn. Cor.* Eaſtern tufted ſilvery Vetch, with a variegated Flower.

24. VICIA *Orientalis, flore maximo palleſcente, macula lutea notato. Tourn. Cor.* Eaſtern Vetch, with a large pale Flower ſpotted with yellow.

25. VICIA *multiflora Caſſubica fruteſcens, lentis ſiliqua. Breyn. Prod.* Shrubby tufted Vetch, with Pods like Lentils.

26. VICIA *ſylvatica multiflora maxima. Phyt. Brit.* The greateſt tufted wood Vetch.

27. VICIA *ſegetum, cum ſiliquis plurimis hirſutis. C. B. P.* Small wild Tare, with many rough Pods.

28. VICIA *ſegetum, ſingularibus ſiliquis glabris. C. B. P.* Corn Vetch, or fine Tare, with ſingle ſmooth Pods.

29. VICIA *minima, cum ſiliquis glabris. Inſt. R. H.* The ſmalleſt Vetch, with ſmooth Pods.

30. VICIA *ſive Cracca, foliis & ſiliquis longioribus. Bot. Monſp.* Vetch with longer Leaves and Pods.

31. VICIA *minima præcox, Pariſienſium. H. R. Par.* The leaſt early Vetch, with an angular Seed.

The firſt of thoſe here mention'd is cultivated in the Fields in divers Parts of *England* for the Seed, which is the common Food of Pigeons: the Method of cultivating them is hereafter inſerted.

The ſecond Sort is a Variety of the firſt, from which it only differs in the Colour of the Flowers and Seeds, which in this Kind are both white; but the Flowers of the other Kind are purple, and the Seeds are black. This may be cultivated as the former.

The third and fourth Sorts are, at preſent, only preſerv'd in Botanic Gardens in *England*; tho' I believe they might be cultivated in the Fields as the common Sort, with good Succeſs.

Theſe muſt be ſown in the Spring, as Peas; but ſhould have a light dry Soil, and require more room than the common Sort: for the Plants are apt to ſpread pretty far, provided they like their Situation. They are both annual Plants, which decay ſoon after their Seeds are ripe. Theſe are ſuppos'd to be the Bean of the antient *Greeks*.

The fifth Sort grows wild in divers Parts of *England*, under Hedges, and by the Sides of Woods, where it climbs upon whatever Buſhes are near it; and during the time of flowering (which is commonly in *June* and *July*) it affords an agreeable Proſpect. This Plant may be cultivated by the Sides of Wilderneſs-quarters; where it may be allow'd to climb upon ſome low Buſhes, without which Support it ſeldom thrives well; and in ſuch ſhady Situations it will flower extremely, and continue for ſeveral Years. The beſt Way to propagate it is by ſowing the Seeds either in Spring or Autumn, in the Places where they are to remain; for theſe Plants commonly ſhoot their Roots downright into the Ground, ſo that they ſeldom thrive well, if tranſplanted.

The ſixth, eighth, and fifteenth Sorts grow wild in this Kingdom. The ſixth is very common in ſhady Woods, and on the Sides of Banks under Trees, in moſt Parts of *England*. The eighth Sort is found on *Shootover-hill*, and in ſome other Places in *England*. And the fifteenth grows on *Glaſtenbury-thorn-hill* in *Somerſetſhire*.

The ſeventh, ninth, tenth, twelfth, fourteenth, ſixteenth, ſeventeenth, and eighteenth Sorts grow wild in *Germany*, *France*, and *Italy*; but are not Natives of this Country. Theſe are all of them abiding Plants, whoſe Roots continue ſeveral Years; but their Shoots die down in Autumn, and freſh ones come out the following Spring; ſome of which will riſe to the Height of five or ſix Feet, and trail over Buſhes, or whatever Plants they grow near; ſo that they muſt be ſupported, otherwiſe they will appear very unſightly.

Theſe may be propagated by Seeds, which may be ſown in Drills on a Border of freſh Earth, expos'd only to the morning Sun. The beſt time for ſowing theſe Seeds is in *March*, and when the Plants come up, they muſt be kept clean from Weeds; and where they are too cloſe together, ſome of them ſhould be drawn up to give room for the remaining ones to grow ſtrong. This is all the Culture they require till *Michaelmas*, when their Shoots will decay; at which time the Roots ſhould be carefully taken up, and tranſplanted where they are deſigned to remain, which ſhould be under Trees, and in other ſhady Wilderneſs-quarters: where, if they are rightly diſpos'd, they will thrive extremely well, and make an agreeable Variety.

The eleventh Sort grows wild in the *Stæchades Iſles*, from whence the Seeds have been obtain'd by ſome curious Perſons, who preſerve the Sort for the ſake of Variety; as is alſo the eighth Sort, which is found wild in the Neighbourhood of *Paris*.

The nineteenth, twentieth, twenty-firſt, twenty-ſecond, twenty-third, and twenty-fourth Sorts were diſcover'd by Dr. *Tournefort* in the *Levant*, from whence he ſent their Seeds to the Royal Garden at *Paris*. Theſe, though they are Natives of warmer Countries than *England*, yet will thrive very well in the open Air, and may be admitted into Gardens for the ſake of Variety.

The twenty-fifth Sort is alſo an abiding Plant, whoſe Shoots decay every Autumn, and freſh ones are produc'd in the Spring. This Sort ſhould have a moiſt ſhady Situation, in which the Shoots will riſe five or ſix Feet high, and produce great Quantities of Flowers; thereby affording an agreeable Variety in ſome obſcure Places, where few better Plants will thrive.

The twenty-ſixth Sort grows wild in ſome Woods in the *North* of *England*, as alſo in *Oxfordſhire*. This is likewiſe an abiding Plant, which ſhould be treated in the ſame manner as the former Sort.

As all theſe Sorts of Vetches grow near Buſhes, or under Hedges, on which they climb, and are thereby ſupported from trailing on the Ground, ſo, whenever they are brought into Gardens, they ſhould be planted in the like Situation; for if they trail on the Ground, they will run over whatever Plants grow near them, and make a bad Appearance; whereas, if they are planted near any ordinary Shrubs, over which they may be allow'd to ramble, their Flowers will appear ſcattering among the Branches of the Shrubs, and afford an agreeable Variety.

The twenty-ſeventh, twenty-eighth, twenty-ninth, and thirtieth Sorts are annual Plants, which grow too plentifully amongſt the Corn, ſo as to become very troubleſome Weeds in ſome Parts of *England*; therefore ſhould be rooted out in the Spring, before their Seeds ripen; for if any of them are permitted to ſtand until their Seeds are ripe, the firſt hot Day after, the Pods will burſt, and caſt their Seeds to a great Diſtance, ſo as to fill the Ground with young Plants in Autumn. Theſe Plants always come up in Autumn, and abide the Winter; during which time they do not appear as if they would ever become large enough to injure the Crop amongſt which they grow; but in the Spring they will ſend forth many lateral Shoots, ſo as to ſpread to a conſiderable Diſtance; and by their Tendrils will faſten themſelves to the Stalks of Corn, or any other Plants, and thereby greatly weaken them; and ſometimes, where theſe Weeds are in plenty, and the Corn but weak, they will ramp quite over it, and thereby almoſt deſtroy it. The beſt time to extirpate theſe Weeds is in *March* or *April*, when, if they are cut up with a Spaddle in dry Weather, they will in a Day or two be effectually deſtroy'd, ſo as not to recover; and if this be repeated two or three Seaſons, it will intirely clear the Land of them.

The thirty-firſt Sort is a very ſmall annual Plant, which grows wild on chalky Hills in ſome Parts of *England*, but particularly near *Greenhith* in *Kent*. It flowers the Beginning of *April*, the Seeds are ripe in *May*, and the Plant ſoon after periſhes; ſo that whoever is deſirous to find it, muſt ſearch for it while it is in Vigour; otherwiſe it is ſo ſmall, that it can hardly be diſcover'd. If this Plant is deſign'd to be preſerv'd in a Garden, the Seeds ſhould be ſown early in Autumn, that the Plants may get Strength before Winter; for when they are ſown in the Spring, they ſeldom ſucceed. When they are once eſtabliſh'd in a Garden, and their Seeds permitted to ſcatter, they will maintain themſelves better than if ſown by Hand; and will require no other Care but to keep them clear from Weeds.

There are ſome of the larger Kinds of theſe Vetches as well worth cultivating in the Fields as the common

Tare, and will ſerve for the ſame Purpoſes; eſpecially the ſecond, third, and ninth Sorts, which grow large, and afford a good Quantity of Seeds. Theſe may all be cultivated in the ſame manner as the common Sort, and are equally hardy.

The uſual time for ſowing of Vetches or Tares is in the Spring, about the Middle of *February*; but from ſeveral Experiments which I have made, I find it to be a much better Method to ſow them in Autumn; for as they are hardy enough to reſiſt the Froſt in Winter, they will get Strength early in the Spring, and will grow conſiderably larger than thoſe which are ſown in the Spring, and will produce a larger Quantity of Seeds; which, ripening early in Summer, may be gather'd in before Wheat-harveſt.

The Sorts of Vetches which are cultivated for Uſe in the open Fields, ſhould be ſown in Drills, after the ſame manner as is practiſed for Peas. Theſe Drills ſhould be a Foot and an half, or two Feet, aſunder, that there may be room for the Hoeing-plough to go between them, in order to deſtroy the Weeds, and to earth the Plants. Theſe Drills ſhould be about the ſame Depth as thoſe uſually made for Peas; and the Seeds ſhould be ſcatter'd about the ſame Diſtance in the Drills. Theſe Seeds ſhould be carefully cover'd as ſoon as they are ſown; for if they are left open, the Rooks will diſcover them; ſo that where they are not carefully watch'd, they will intirely devour them. Indeed theſe, being ſown in Autumn, will be in leſs Danger than thoſe which are ſown in the Spring; becauſe there is more Food for Rooks and Pigeons in the open Fields at this Seaſon; and the Plants will appear much ſooner above-ground. The beſt time to ſow them is, about the Beginning of *September*; for the Rains which uſually fall at that Seaſon, will bring them up in a ſhort time. Toward the Latter-end of *October*, the Plants will have obtained conſiderable Strength; wherefore they ſhould then be earthed up with the Hoeing-plough. This Work ſhould be perform'd in dry Weather, and in doing of it Care muſt be had to lay the Earth up as high to the Stems of the Plants as poſſible, ſo as not to cover their Tops; becauſe this will ſecure them againſt Froſt. The whole Space of Ground between the Rows ſhould alſo be ſtirr'd, in order to deſtroy the Weeds; which, if carefully perform'd in dry Weather, will lay the Land clean till *March*; at which time the Crop ſhould be earth'd a ſecond time, and the Ground clean'd again between the Rows; which will cauſe the Plants to grow vigorous, and in a little time they will ſpread ſo as to meet, and cover the Spaces; whereas thoſe ſown in the Spring will not grow to half this Size, and will be very late in flowering.

Some People ſow theſe Vetches; and when they are fully grown, plow them in the Ground, in order to manure it. Where this is deſign'd, there will be no Occaſion to ſow them in Drills at this Diſtance, nor to huſband them in the manner before directed; but in this Caſe it will be the beſt Method to ſow them in Autumn, becauſe they will be fit to plow in much ſooner the following Year; ſo that the Land may be better prepar'd to receive the Crops for which it is intended. In ſome Parts of *France*, and in *Italy*, theſe Vetches are ſown for feeding of Cattle while green, and are accounted very profitable: and in many Parts of *England* they are cultivated to feed

Cart-horſes, *&c.*; though upon ſuch Land, where Lucern will thrive, it will be much better Huſbandry to cultivate that for this Purpoſe.

Where theſe Plants are cultivated for their Seeds, they ſhould be cut ſoon after the Pods change brown; and when they are dry, they muſt be immediately ſtack'd; for if they are ſuffer'd to lie out in the Field to receive Wet, and there comes one hot Day after it, the Pods will moſt of them burſt, and caſt out the Seeds. When the Seeds are threſh'd out, the Haulm is eſteem'd very good Food for Cattle; and ſome have recommended the Seeds for Horſes, and affirm they are as proper for thoſe Animals as Beans; which, if true, will render them more valuable, becauſe theſe will grow on the lighteſt ſandy Land, where Beans will not thrive; ſo may be a good Improvement to ſome Counties in *England*, where they do not attempt to cultivate Beans.

VINCA PERVINCA. *Vide* Pervinca.

VINCETOXICUM. *Vide* Aſclepias.

VINE. *Vide* Vitis.

VIOLA, Violet.

The *Characters* are;

It hath a polypetalous anomalous Flower, ſomewhat reſembling the papilionaceous Flower; for its two upper Petals, in ſome meaſure, repreſent the Standard, the two ſide ones the Wings; but the lower one, which ends in a Tail, in ſome meaſure reſembles the Keel: out of the Empalement ariſes the Pointal, which afterward becomes a Fruit, for the moſt part, three-corner'd, opening into three Parts, and full of roundiſh Seeds.

The *Species* are;

1. VIOLA *Martia purpurea, flore ſimplici odore. C. B. P.* Common purple Violet, with a ſweet-ſcented Flower.

2. VIOLA *Martia major hirſuta inodora. Mor. Hiſt.* Greater hairy *March* Violet, without Smell.

3. VIOLA *Martia inodora ſylveſtris. C. B. P.* Wild or Dogs Violet.

4. VIOLA *Martia alba. C. B. P.* White ſweet-ſcented Violet.

5. VIOLA *Martia, multiplici flore. C. B. P.* Double purple Violet.

6. VIOLA *Martia, flore multiplici candido. C. B. P.* Double white Violet.

7. VIOLA *Martia, folio eleganter variegato, flore albo. March* Violet, with a beautiful variegated Leaf, and a white Flower.

8. VIOLA *Martia, flore rubello. March* Violet, with a rediſh-colour'd Flower.

9. VIOLA *erecta, flore cæruleo. Mor. Hiſt.* Upright Violet, with a blue Flower.

10. VIOLA *Martia hortenſis, foliis amplioribus. C. B. P.* Garden *March* Violet, with larger Leaves.

11. VIOLA *Martia inodora ſylveſtris, foliis mucronatis, oblongis, & ſtrictioribus. C. B. P.* Dogs Violet, with oblong and narrow-pointed Leaves.

12. VIOLA *Martia, multiplici flore rubello. C. B. P. March* Violet, with a double rediſh Flower.

13. VIOLA *Martia, multiplici flore ex albo & purpureo variegato. C. B. P. March* Violet, with a double Flower, variegated with White and Purple.

14. VIOLA *Martia multiplex, flore cinereo. H. R. Par.* Double *March* Violet, with an aſh-colour'd Flower.

15. VIOLA *Martia intenſe purpurea, flore minore pleno. J. B. March* Violet, with a ſmall double Flower, of a deep-purple Colour.

16. VIOLA *Alpina, folio in plures partes diſſecto. C. B. P.* *Alpine* Violet, with a Leaf cut into many Parts.

17. VIOLA *Alpina rotundifolia lutea. C. B. P.* Yellow Violet of the *Alps*, with a roundiſh Leaf.

18. VIOLA *montana lutea grandiflora. C. B. P.* Mountain Violet, with a large yellow Flower.

19. VIOLA *tricolor hortenſis repens. C. B. P.* Panſies, Hearts-eaſe, or three-colour'd Violet, commonly call'd three Faces under an Hood.

20. VIOLA *montana tricolor odoratiſſima. C. B. P.* The moſt ſweet-ſmelling three-colour'd mountain Violet.

21. VIOLA *montana alba grandiflora. C. B. P.* Great-flower'd white mountain Violet.

22. VIOLA *montana lutea, ſubrotundo crenato folio. Barr. Icon.* Yellow mountain Violet, with a roundiſh notch'd Leaf.

23. VIOLA *montana cærulea grandiflora. H. R. Par.* Great-flower'd blue mountain Violet.

24. VIOLA *montana lutea, foliis non crenatis. C. B. P.* Yellow mountain Violet, with Leaves not notched.

25. VIOLA *Ætnica erecta bicolor hirſuta minima elatior ac ramoſior. Hort. Cath.* Upright two-colour'd hairy very ſmall Violet of *Ætna*, taller and more branching.

26. VIOLA *arvenſis, flore toto luteo. C. B. P.* Field Violet, with a Flower all yellow.

27. VIOLA *cærulea maxima, cucumerinis hirſutis foliis, Virginiana. Pluk. Phyt.* The largeſt blue Violet of *Virginia*, with hairy Cucumber-leaves.

28. VIOLA *maxima, cucumerinis hirſutis foliis, Virginiana, flore luteo. Pluk. Alm.* The largeſt Violet of *Virginia*, with hairy Cucumber-leaves, and a yellow Flower.

29. VIOLA *Virginiana, platani fere foliis, parvis & incanis. Pluk. Mantiſſ.* *Virginian* Violet, with ſmall hoary Leaves, ſhap'd like thoſe of the Plane-tree.

The firſt Sort here mention'd is very common in Woods, and ſhady Lanes, in divers Parts of *England*, and is what ſhould always be uſed in Medicine; though the People who ſell theſe Flowers in the Markets, do many times impoſe upon the Ignorant the Flowers of the ſecond Sort, which are much larger than thoſe of the firſt, and fill up the Meaſure better; but they, having no Smell, are very improper for Uſe.

All the eight firſt Sorts are pretty Varieties in a Garden; where, being planted under Hedges, in Wilderneſſes, or other ſhady Places, they will thrive exceedingly, and will want no other Culture than only to keep them clear from Weeds; and in the Spring, when they are in Flower, they caſt forth a moſt agreeable Perfume, eſpecially in Mornings or Evenings; ſo that it renders ſuch Places very delightful at thoſe Seaſons.

Theſe may be eaſily propagated by parting their Roots. The beſt time for which is at *Michaelmas*, that the Plants may take Root before Winter; ſo that they may flower ſtronger the ſucceeding Spring.

The double Sorts, and thoſe without Smell, may be admitted for Variety; but the ſingle blue, white, and rediſh-colour'd Sorts, are thoſe which ſhould be moſt cultivated; becauſe theſe are equally well-ſcented, in which the greateſt Curioſity of theſe Flowers conſiſts. And theſe, all growing wild in *England*, may be eaſily obtain'd in Quantity from their Places of Growth, by ſuch who are fond of theſe Flowers.

The ninth Sort is preſerv'd in ſome curious Gardens for Variety; but there is no Scent in its Flowers; ſo that it hardly merits a Place in curious Flower-gardens.

The tenth Sort differs from the common Violet, in having large hairy Leaves; and the Flowers have not ſo good Flavour: but this Sort is frequently cultivated in Gardens, and the Flowers are brought to the Markets; tho' they are not near ſo good for Uſe as the common Sort.

The eleventh has oblong pointed Leaves, in which it differs from the laſt: the Flowers of this Sort have no Flavour; ſo are unfit for Uſe.

The twelfth, thirteenth, fourteenth, and fifteenth Sorts are Varieties of the common Violet with double Flowers: theſe are worthy of a Place in every good Garden, on account of their fine double ſweet-ſmelling Flowers, eſpecially as they require no other Culture than the common Violet: but theſe Sorts do not produce their Flowers in great Plenty, unleſs they are planted in a ſtrong Soil, and an open airy Situation; for in ſmall or cloſe Gardens they do not flower near ſo well, as where they have a clear open Air.

The eleven next-mention'd Sorts agree with the Hearts-eaſe or Panſies, more than with the other Kinds of Violet: the ſeventeenth, eighteenth, twenty-firſt, and twenty-third Sorts are perennial Plants, which may be propagated by parting their Roots; the beſt time for doing of this is at *Michaelmas*, that they may be well rooted before the Spring: theſe delight in Shade and Moiſture, therefore ſhould be planted on a North Border; and in dry Weather they muſt be duly water'd, otherwiſe they will not thrive. The eighteenth Sort grows wild in the North of *England*, upon moiſt Mountains: the twenty-firſt and twenty-third Sorts are only Varieties of this, differing in the Colour of their Flowers.

The nineteenth is the common Panſy or Hearts-eaſe, of which there are a great Number of Varieties: theſe are all annual Plants, which ſcatter their Seeds, and propagate themſelves in plenty, where they are permitted to ſtand: the twentieth Sort is by much the moſt valuable, the Flowers of this being larger, the Colours very beautiful, and the Scent almoſt equal to the common Violet-flower.

Theſe Sorts will ſcatter their Seeds in a ſhort time after their Flowers are paſt; and the Plants which come up in Autumn will flower very early in the Spring; and theſe will be ſucceeded by the Spring-plants; ſo that where they are indulged in a Garden, there will be a conſtant Succeſſion of their Flowers the greateſt Part of the Year; for they will flower all the Winter in mild Seaſons, and moſt Part of the Summer in ſhady Situations; which renders them worthy of a Place in every good Garden: but then they muſt not be allowed to ſpread too far, leſt they become troubleſome Weeds; for their Seeds, when ripe, are caſt out of their Covers with great Elaſticity to a conſiderable Diſtance; and the Plants will ſoon ſpread over a large Space of Ground, if they are permitted to ſtand.

The common Panſy ſtands in the *College-Diſpenſatory*, as a medicinal Plant; but is rarely uſed in *England*.

The twenty-ſeventh, twenty-eighth, and twenty-ninth Sorts are Natives of *Virginia*, *New-England*, and ſeveral other Parts of *North-America*; from whence ſome of the

Plants have been brought to *England*, and are preſerv'd in Gardens by ſome curious Perſons, for the ſake of Variety: but as their Flowers have no Scent, and little Beauty, they are not much regarded.

Theſe are as hardy as the common Violet, and may be propagated by parting their Roots, in the ſame manner as is practis'd for that; and they ſhould have a moiſt ſhady Situation, and a light Soil.

VIORNA. *Vide* Clematitis.

VIRGA AUREA, Golden-rod.

The *Characters* are;

The Leaves are, for the moſt part, whole, and are plac'd alternately on the Stalks: the Calyx, *or Flower-cup, is ſquamous: the Flowers are ſmall, radiated, and of a yellow Colour, conſiſting of many Florets, each of which is furniſh'd with an Embryo, which afterward becomes a Seed, having a downy Subſtance adhering to it: to which ſhould be added, That the Flowers are produc'd in a long Spike.*

The *Species* are;

1. Virga Aurea *vulgaris latifolia. J. B.* The common or broad-leav'd Golden-rod.

2. Virga Aurea *montana, folio anguſto ſubincano, floſculis conglobatis. Raii Syn.* Narrow-leav'd mountain Golden-rod, with an hoary Leaf, and conglobate Flowers.

3. Virga Aurea *anguſtifolia, panicula ſpecioſa, Canadenſis. H. R. Par.* Narrow-leav'd *Canada* Golden-rod, with a ſpecious Panicle.

4. Virga Aurea *Canadenſis hirſuta, panicula minus ſpecioſa. Boerh. Ind.* Rough *Canada* Golden-rod, with a leſs ſpecious Panicle.

5. Virga Aurea *Novæ Angliæ altiſſima, paniculis nonnunquam reflexis. Flor. Bat.* The talleſt *New-England* Golden-rod, with a reflex'd Panicle.

6. Virga Aurea *altiſſima ſerotina, panicula ſpecioſa patula. Rand.* Talleſt late-flowering Golden-rod, with a ſpecious ſpreading Panicle.

7. Virga Aurea *Virginiana, foliis anguſtioribus aſperis, panicula minus ſpecioſa. Pluk. Phyt.* *Virginian* Golden-rod, with narrow rough Leaves, and a leſs ſpecious Panicle.

8. Virga Aurea *rugoſis foliis, Virginiana, panicula florum ampliſſima. Pluk. Phyt.* Rough-leav'd *Virginian* Golden-rod, with an ample Panicle of Flowers.

9. Virga Aurea *foliis lævibus non ſerratis, panicula ſpecioſa, floribus magnis. Flor. Bat.* Smooth-leav'd Golden-rod, with a ſpecious Panicle, and large Flowers.

10. Virga Aurea *Marylandica, ſpicis florum racemoſis, foliis integris ſcabris. Mart. Hiſt. Rar. Plant.* Golden-rod from *Maryland*, with branching Spikes of Flowers, and whole rough Leaves.

11. Virga. Aurea *Canadenſis, aſteriſci folio. Par. Bat.* *Canada* Golden-rod, with a Leaf like Aſteriſcus.

12. Virga Aurea *Americana ſerrata, floribus ad foliorum alas conglobatis. Breyn. Prod.* *American* Golden-rod, with ſerrated Leaves, and conglobated Flowers coming out from the Wings of the Leaves.

13. Virga Aurea *limonii folio, panicula uno verſu diſpoſita. H. R. Par.* Golden-rod with a Sea-lavender-leaf, and the Flowers growing upon one Side of the Stalk.

14. Virga Aurea *Noveboracenſis glabra, caulibus rubentibus, foliis anguſtis glabris. Flor. Bat.* Smooth *New-York* Golden-rod, with red Stalks, and narrow ſmooth Leaves.

15. Virga Aurea *floribus fiſtuloſis, ſenecionis inſtar, foliis anguſtioribus non ſerratis. Hiſt. Oxon.* Golden-rod with fiſtulous Flowers, ſomewhat

what like Groundſel, and narrow ſmooth Leaves.

16. Virga Aurea *Canadenſis, foliis carnoſis non ſerratis latioribus. Hiſt. Oxon.* Golden-rod with broad fleſhy ſmooth Leaves.

17. Virga Aurea *Novæ Angliæ, foliis longiſſimis glabris. Flor. Bat. New-England* Golden-rod, with long ſmooth Leaves.

18. Virga Aurea *Americana hirſuta, radice odorato. Joncq.* Hairy *American* Golden-rod, with a ſweet Root.

19. Virga Aurea *Americana cæſia glabra. Hort. Elth.* Smooth *American* Golden-rod.

20. Virga Aurea *Americana, foliis anguſtiſſimis glabris, floribus ex alis foliorum prodeuntibus. Dale. American* Golden-rod, with very narrow ſmooth Leaves, and the Spikes of Flowers coming out from the Wings of the Leaves.

21. Virga Aurea *Americana ſerotina, caulibus purpuraſcentibus, foliis oblongo-ovatis glabris ſeſſilibus, ſpicis florum craſſioribus. Dale.* Late *American* Golden-rod, with purple Stalks, and oblong oval ſmooth Leaves embracing the Stalks, and thick Spikes of Flowers.

22. Virga Aurea *major, foliis glutinoſis & graveolentibus. Inſt. R. H.* Greater Golden-rod, with clammy and ſtinking Leaves.

23. Virga Aurea *minor, foliis glutinoſis & graveolentibus. Inſt. R. H.* Smaller Golden-rod, with clammy and ſtinking Leaves.

24. Virga Aurea *major, foliis glutinoſis & graveolentibus, gallas ferens. Inſt. R. H.* Greater gall-bearing Golden-rod, with clammy and ſtinking Leaves.

25. Virga Aurea *Virginiana annua. Zan.* Annual *Virginian* Golden-rod.

26. Virga Aurea *Americana annua graveolens, flore minimo, foliis conjugatis, & hyperici modo perforatis. Houſt.* Annual ſtinking *American* Golden-rod, with a very ſmall Flower, and Leaves growing by Pairs, which are perforated in the manner of *St. John's-wort.*

27. Virga Aurea *Americana, urticæ foliis rugoſis conjugatis & hirſutis, florum ſpicis folioſis. Houſt. American* Golden-rod, with rough Nettle-leaves growing by Pairs, and the Spikes of Flowers ſet with ſmall Leaves.

28. Virga Aurea *Americana fruticoſa, ſalicis folio, floribus quaſi umbellatis. Houſt.* Shrubby *American* Golden-rod, with a Willow-leaf, and Flowers growing almoſt in an Umbel.

There are ſeveral other Varieties of this Plant, which are preſerv'd in ſome curious Botanic Gardens; but thoſe here mention'd are the moſt valuable Sorts which I have yet ſeen in the *Engliſh* Gardens; the greateſt Part of which are Natives of *America*, from whence it is very probable, there may be many other Sorts brought, ſince theſe Plants propagate themſelves by ſhedding thier Seeds, which are likely to produce new Varieties annually; as do moſt other Sorts of Plants; ſo that there may be no End to their Variety.

Theſe Plants are very great Ornaments in the Borders of large Flower-gardens, where, by their Succeſſion of Flowering, they afford a very great Pleaſure; for the earlieſt Kinds begin to flower in *June*, which are ſucceeded by other Sorts until the Latter-end of *October*; and their Flowers, being produced, for the moſt part, on long ſpecious Spikes or Panicles, make a very handſome Appearance, and are very ornamental to Flower-pots, when intermix'd with Flowers of different Colours, to place in Rooms.

They are all eaſily propagated by parting their Roots in the Spring, before they begin to ſhoot; and ſhould be planted in the Middle of the larger Borders in the Flower-garden: they will grow in almoſt any Soil or Situation; but will thrive beſt in a freſh light Earth, and an open Expoſure; tho' ſome of the hardieſt of them may be plac'd under Avenues of Trees, where they will continue in Flower a long time, and look very well. The firſt twelve Sorts are hardier than the reſt, and will increaſe very faſt by Off-ſets, which ſome of them ſend forth in very great Plenty; inſomuch that if they are not carefully dug round, at leaſt once in every Year, and their Roots cut round, they will ſpread over the Borders where they are planted, and deſtroy ſuch Plants as ſtand near them. The other Sorts ſhould have a warmer Situation, and a dry Soil: theſe are not ſo apt to ſpread at their Roots as the others; ſo that there will be no Difficulty of keeping them within Bounds.

The firſt Sort here mention'd is ſometimes uſed in Medicine. This grows wild in moſt ſhady Woods in the South Parts of *England*; from whence the Roots may be tranſplanted into a ſhady Part of the Garden, where they will thrive and flower very well.

The ſecond Sort grows upon the Mountains in *Wales*, as alſo upon the *Alps* and *Pyrenees*: this is a very low Plant, ſeldom riſing more than a Foot high, and flowers toward the Latter-end of *June*.

The nineteen Sorts next-mention'd are Natives of *America*: theſe grow ſome two Feet, others three, ſome four and five Feet high; and flower after each other from *July* to *November*.

Theſe are all perennial Plants, which die to the Surface of the Ground every Winter, but riſe again the ſucceeding Spring: moſt of them produce their Flowers in Autumn; and if the Seaſon proves favourable, will ripen their Seeds; which, if ſown ſoon after ripe, will come up the following Spring, from whence ſome new Varieties may be obtained.

The twenty-ſecond, twenty-third, and twenty-fourth Sorts ſeldom continuing longer than two or three Years, ſhould be often renewed. Theſe may be increaſed by parting their Roots; but the Plants which are thus parted, rarely thrive ſo well as thoſe which are raiſed from Seeds: but as theſe Plants do not perfect their Seeds every Year in *England*, the other Method muſt be practiſed to preſerve the Kinds. The beſt time for this Work is in Autumn, that they may be well rooted before the Spring, otherwiſe they will not flower very ſtrong. Theſe Sorts ſhould be planted on a loamy Soil on open Borders; for they will not thrive under the Drip of Trees.

The twenty-fifth Sort is an annual Plant of no great Beauty; which, if permitted to ſcatter its Seeds, will become a Weed over the Garden. This Plant is now become a common Weed in the Fields in divers Parts of *England*: but it is generally believ'd the Seeds were at firſt blown out of Gardens; for it was originally brought from *America*.

The twenty-ſixth, twenty-ſeventh, and twenty-eighth Sorts were diſcover'd by the late Dr. *Houſtoun*, at *La Vera Cruz*. Theſe, being tender Plants, will not live in the open Air in *England*. They may be propagated by Seeds, which ſhould be ſown on a moderate Hot-bed early in the Spring; and when the Plants are come up, they ſhould be tranſplanted into Pots fill'd with freſh Earth, and then plung'd into a moderate Hot-bed of Tanners Bark; obſerving, after they have taken new Root, to admit a large Share of free Air to them every Day, when the Weather is warm, as alſo to water them conſtantly every Day; for they naturally grow in moiſt Places. The twenty-ſixth Sort, which is an annual Plant, will flower toward the Middle of *June*, and the Seeds will ripen the End of *Auguſt*; when ſome of them ſhould be ſown to come up before Winter; becauſe the Seeds will more certainly grow at this Seaſon, than in the Spring; and the Plants will grow much ſtronger. The twenty-ſeventh Sort, being a biennial Plant, rarely flowers the firſt Seaſon; therefore this, and the twenty-eighth Sort, which is an abiding Plant, ſhould be removed into the Stove at *Michaelmas*, and placed where they may have a temperate Degree of Warmth in Winter, in which they may be preſerv'd: but they muſt be frequently refreſh'd with Water, tho' in very cold Weather it muſt not be given in great Quantities. With this Management the Plants will flower extremely well, and add to the Variety in the Stove.

VISCUM, Miſleto.

The *Characters* are;

The Flower conſiſts of one Leaf, which is ſhap'd like a Baſin, and, for the moſt part, divided into four Parts, and beſet with Warts: the Ovary, which is produc'd in the Female Flowers, is plac'd in a remote Part of the Plant from the Male Flowers, and conſiſts of four ſhorter Leaves: this afterward becomes a round Berry, full of a glutinous Subſtance incloſing a plain heart-ſhap'd Seed.

We have but one *Species* of this Plant in *England*; *viz.*

VISCUM *baccis albis. C. B. P.* Common Miſleto, with white Berries.

This Plant is always produc'd from Seed, and is not to be cultivated in the Earth, as moſt other Plants; but is always found growing upon Trees; from whence the Antients accounted it a Super-plant; moſt of whom thought it was an Excreſcence on the Tree, without the Seed being previouſly lodg'd there: which Opinion is now generally confuted from a repeated Number of Experiments.

The Manner of its being propagated is this; *viz.* The Miſleto-thruſh, which feeds upon the Berries of this Plant in Winter, when it is ripe, doth often carry the Seeds from Tree to Tree; for the viſcous Part of the Berry, which immediately ſurrounds the Seeds, doth ſometimes faſten it to the outward Part of the Bird's Beak; which to get diſengaged of, he ſtrikes his Beak againſt the Branches of a neighbouring Tree, and thereby leaves the Seed ſticking by this viſcous Matter to the Bark; which, if it lights upon a ſmooth Part of the Tree, will faſten itſelf thereto, and the following Winter will put out and grow; and in the ſame manner it may be propagated by Art; for if the Berries, when full-ripe, are rubbed upon the ſmooth Part of the Bark of a Tree, they will adhere cloſely thereto; and, if not deſtroyed, will produce Plants the following Winter.

The Trees which this Plant doth moſt readily take upon, are, the Apple, the Aſh, and ſome other ſmooth-rinded Trees; but I have ſeveral times try'd it upon the Oak without Succeſs; for the Bark of that

Tree is of too cloſe a Texture to admit the Seeds ſtriking therein; which is alſo the Reaſon it is ſo rarely found upon that Tree: and notwithſtanding the great Encomiums which have been given to the Miſleto of the Oak, for its Medicinal Virtues; yet I can't help thinking, that it is equally good, from whatever Tree it be taken; nor is it poſſible to find this Plant growing in any Quantity upon the Oak; ſo that thoſe Perſons who pretend to furniſh the Town with it for phyſical Uſe, do but impoſe upon the World; for it is ſo rarely met with, that whenever a Branch of an Oak-tree hath any of theſe Plants growing upon it, it is cut off, and preſerv'd by the Curious in their Collections of Natural Curioſities; and of theſe there are but few to be ſeen in *England*.

As to what ſome Perſons have aſſerted of the Manner how it is propagated, from Tree to Tree, by the Miſleto-thruſhes, which eat the Berries, and void the Seed in their Dung, upon the Branches of Trees, whereby the Seeds are ſtuck thereon, and take Root into the Bark, and produce freſh Plants, I can by no means agree to; ſince if it were only this way propagated, it would always be found upon the Upper-part or the Sides of ſuch Branches, upon which the Dung can only be ſuppoſed to lodge; whereas it is generally found upon the Under-ſide of Branches, where it is almoſt impoſſible for theſe Birds to caſt their Dung; beſides, I believe the Stomachs of theſe Birds are too powerful Digeſters to ſuffer any Seeds to paſs intire through the Inteſtines. But I ſhall leave this to ſuch as have Leiſure to make Obſervations in thoſe Places where this Plant abounds; and ſhall add only a ſhort Account of the Method us'd to make Birdlime, which may not be improper to inſert in this Place for the Satisfaction of the Curious.

The *Italians* make their Birdlime of the Berries of Miſleto, heated and mix'd with Oil, as that made of Holly-bark; and, to make it bear the Water, they add Turpentine.

That which is commonly us'd with us, is made of the Bark of Holly; which they boil for ten or twelve Hours: and when the green Coat is ſeparated from the other, they cover it up for a Fortnight in a moiſt Place, pounded into a tough Paſte, that no Fibres of the Wood be left; then they waſh it in a running Stream till no Motes appear, and put it up to ferment for four or five Days, and ſcum it as often as any thing ariſes, and then lay it up for Uſe. When they uſe it, they incorporate with it a third Part of that Oil over the Fire.

The Birdlime that is brought from *Damaſcus* is ſuppoſed to be made of Sebeſtens, their Kernels being frequently found in it; but this will not endure either Froſt or Wet.

The Birdlime brought from *Spain* is of an ill Smell.

The Bark of our Lantone or Wayfaring Shrub, as it is ſaid, will make Birdlime as good as the beſt.

VISNAGA, *Spaniſh* Picktooth.

The *Characters* are;

It is an umbelliferous Plant, with a roſe-ſhaped Flower, conſiſting of ſeveral Petals, which reſt on the Empalement; which afterward becomes the Fruit, compoſed of two oblong furrow'd Seeds: to theſe Notes muſt be added, The Leaves are finely divided like Fenel; and when the Flowers fall off, the Umbel contracts together.

The *Species* are;

1. Visnaga *ſeu Gingidium. Mor. Umb.* Common *Spaniſh* Picktooth.

2. Visnaga *ſeu Gingidium Montis Libani. Munt. Plant.* Greater Tooth-pick of Mount *Libanus.*

The firſt Sort grows plentifully in the South of *France,* as alſo in *Spain* and *Italy.* The *Spaniards* make uſe of the Footſtalks of the Umbel for Tooth-picks, from whence it obtained this Name. This Plant is preſerv'd in the Gardens of ſome curious Perſons, for the ſake of Variety. It is an annual Plant, and periſhes ſoon after the Seeds are ripe. The Seeds of this Plant ſhould be ſown early in Autumn, that the Plants may obtain Strength before the Froſt. Theſe will endure the Cold of our Winters extremely well, provided the Seeds are ſown on a dry Soil; for theſe Plants do not very well bear tranſplanting: therefore the Seeds ſhould be ſown where the Plants are deſign'd to remain. In the Spring the Plants ſhould be thinn'd where they come up too thick, leaving them about ſix or eight Inches aſunder; and if they are afterward kept clear from Weeds, it is all the Culture they require. In *June* they will flower, and their Seeds will ripen in *Auguſt.*

The ſecond Sort is leſs common in *England* than the firſt: this is found on Mount *Libanus,* and in ſeveral other mountainous Places in the Eaſt Country. The Umbels of this Sort are much larger than of the former, and the Leaves of the Plant are not ſo finely cut. The Seeds of this Sort have been often brought into *England,* from which I have raiſed the Plants, which have grown very well the former Part of the Seaſon; but they have always decay'd ſoon after *Midſummer*; ſo that I never could preſerve any of them to flower.

VITEX, *Agnus Caſtus,* or the Chaſte-tree.

The *Characters* are;

It hath a Flower conſiſting of one Leaf, which appears as if it had two Lips: the Fore-part is tubuloſe; from whoſe Flower-cup riſes the Pointal, which afterward becomes an almoſt ſpherical Fruit, which is divided into four Cells, in which are contain'd oblong Seeds: to which may be added, The Leaves are digitated, or finger'd, like thoſe of Hemp.

The *Species* are;

1. Vitex *foliis anguſtioribus, cannabis modo diſpoſitis. C. B. P.* The Chaſte-tree with narrow Leaves.

2. Vitex *latiore folio. C. B. P.* The Chaſte-tree with broad ſerrated Leaves.

3. Vitex *ſive Agnus, flore albido. H. R. Par.* The Chaſte-tree, with whitiſh Flowers.

4. Vitex *ſive Agnus minor, foliis anguſtiſſimis. H. R. Par.* The leſſer Chaſte-tree, with very narrow Leaves.

The firſt of theſe Plants is pretty common in moſt of thoſe *Engliſh* Gardens, where a Variety of hardy Trees are preſerv'd; but the other Sorts are leſs common, and only in ſome curious Gardens at preſent. Theſe Plants are all very hardy, and may be propagated by planting their Cuttings early in the Spring, before they ſhoot: they require a freſh light Soil, and muſt be frequently refreſhed with Water, until they have taken Root; after which they muſt be carefully clear'd from Weeds, during the Summer-ſeaſon; and if the Winter prove ſevere, you muſt lay a little Mulch upon the Surface of the Ground between the Plants, to prevent the Froſt from penetrating to their Roots, which would injure them while they are young: toward the middle of *March,* if the Seaſon be favourable, you ſhould tranſplant them either into the Places where they are deſign'd to remain, or into a Nurſery for two or three Years to get Strength; where they muſt be prun'd up, in order to form them into regular Plants, otherwiſe they are very ſubject to ſhoot out their Branches in a ſtraggling manner.

If theſe Plants are plac'd in a warm Situation, and have a kindly light Soil, they will grow to be eight or ten Feet high, and produce their Spikes of Flowers at the Extremity of every ſtrong Shoot in Autumn; which, altho' of no great Beauty, yet coming late in the Year, and having an odd Appearance, together with the Variety of their Leaves, renders them worthy of a Place in ſmall Wilderneſs-quarters, amongſt other Shrubs of the ſame Growth.

They may alſo be propagated by laying down their Branches in the Spring of the Year; in doing of which you muſt be very careful not to break them; for their Shoots are extremely brittle, and very ſubject to ſplit off with the leaſt Violence: theſe will take Root in one Year, provided they are water'd in very dry Weather; and may then be tranſplanted out, and manag'd, as was directed for thoſe Plants rais'd from Cuttings.

VITIS, The Vine.

The *Characters* are;

The Flower conſiſts of many Leaves, which are plac'd in a circular Order, and expand in form of a Roſe: the Ovary, which is ſituated in the Bottom of the Flower, afterward becomes an oval or round Fruit, which is very full of Juice, and contains many ſmall Stones in each: to which ſhould be added, That the Tree is climbing, ſending forth Claſpers at the Joints; by which it faſtens itſelf to whatever Plant ſtands near it; and the Fruit is produc'd in Bunches.

The *Species* are;

1. VITIS *ſylveſtris Labruſca. C. B. P.* The wild Vine, commonly call'd the Claret Grape. This Sort of Grape is pretty well known in *England*: it has a Berry of a middling Size, of a deep black Colour, cover'd over with a Bloom like a Plum, which may be wiped off; the Juice ſtains of a deep-red Colour; and before it is quite dead-ripe, is of an auſtere Taſte: the Bunches are pretty large, but ſhort, having commonly two Side-bunches or Shoulders on the Upper-part of the Bunch: the Leaves of this Vine are jagged, and change to a deep-red Colour before they fall off.

2. VITIS *præcox Columellæ. H. P. Par.* This is called in *England* the *July* Grape; but in *France*, *Morillon*, and *Vigne bâtive*. This is the earlieſt Grape at preſent known in *England*, for which it is chiefly preſerv'd; for it is not much eſteem'd for its Goodneſs: the Skin is thick, the Juice but very indifferent; and the Berries commonly grow very thin upon the Bunches. Theſe are of a middle Size, and of a dark muddy-red Colour.

3. VITIS *Corinthiaca ſive Apyria. J. B.* The *Corinth* Grape, vulgarly call'd the Curran Grape, is an early Ripener; the Berry is ſmall and ſlender, the Juice very ſweet, and hath very little Stone. Of this Kind there are two or three different Colours, as red, black, and tawny. This is the Sort which is brought from the Iſlands of *Zant*, *Cephalonia*, &c. by the Name of Currans, and ſold by the Grocers of *London*, to put into Puddens, *&c.*

4. VITIS *laciniatis foliis. Cornut.* The Parſley-leav'd Grape, *vulgo.* This Sort was originally brought from *Canada*, where it grows wild in

in the Woods; and is preſerv'd in the Gardens of the Curious, for the Variety of its fine jagged Leaves. This is a pretty large white Grape, and has a ſweet Juice, but not very vinous: the Berries are very apt to grow thin upon the Bunches, unleſs the Vine is pruned ſhort, and left but thin with Wood.

5. Vitis *ſubhirſuta. C. B. P.* The Morillon Taconne, or Munier, *i. e.* the Miller's Grape; this is call'd the *Burgundy* in *England*. The Leaves of this Sort are very much powder'd with White, eſpecially in the Spring, when they firſt come out, from whence it had the Name of Miller's Grape. It produces middle-ſiz'd black Grapes, which grow cloſe upon the Bunches, and are generally ſhort and thick. This is an excellent Bearer, and an hardy Sort.

6. Vitis *præcox Columellæ, acinis dulcibus nigricantibus*. The black Morillon. This is call'd in *Burgundy*, Pineau, and at *Orleans*, Auverna. It is a very ſweet Grape, of a middle Size, ſomewhat oval, and of a fine black Colour; the Bunches are ſomewhat longer than thoſe of the former. This makes very good Wine.

7. Vitis *uva perampla, acinis albidis dulcibus durioribus. Tourn.* The Chaſſelas blanc, Bar-ſur-Aube, White Chaſſelas, or Royal Muſcadine. This is a large white Grape, and grows cloſe upon the Bunches, which are alſo very large, and have commonly two ſmall Side-bunches or Shoulders produc'd from the Upper-part of the Bunch: the Berries, when full-ripe, if well expos'd to the Sun, change to a pale amber Colour; the Juice is very rich, and the Fruit is commonly ripe early in *September*.

8. Vitis *uva perampla, acinis dulcibus nigricantibus. Tourn.* The Chaſſelas noir, *i. e.* The black Chaſſelas. This is very often call'd the black Muſcadine. The Berries of this are as large as thoſe of the former; the Bunches are commonly larger, and are ſomewhat later ripe; the Juice is very rich. If well expoſed, they bear well, and are ripe toward the End of *September*.

9. Vitis *uva perampla, acinis dulcibus rubentibus. Tourn.* The red Chaſſelas. This is alſo call'd the red Muſcadine. The Berries of this Sort are a little larger than thoſe of the former, and grow much thinner upon the Bunches; are of a faint-red Colour; and the Juice is very ſweet, but later ripe; upon which account it is not ſo valuable in *England*.

10. Vitis *uva perampla, acinis ovatis albidis. Tourn.* The Burdelais, vulgarly call'd Burlake. The Berries of this Kind are very large, of an oval Shape, and grow pretty cloſe on the Bunches, which are ſometimes of a prodigious Size. I have ſeen a Bunch of theſe Grapes, which has weighed five Pounds: but they never ripen in this Country, ſo that they are fit for nothing except Verjuice, or to make Tarts.

11. Vitis *acinis albis dulciſſimis, Vitis Apiana. C. B. P. Garidel.* The Muſcat, or White Frontiniac. The Berries of this Kind are large, and grow extremely cloſe upon the Bunches, which are very long, and have commonly two Shoulders: the Fruit, when ripe, has a rich muſky Flavour; but it is commonly very late in Autumn before they ripen; and the Berries, being ſo very cloſe upon the Bunches, detain the Moiſture in their Middles; ſo that they commonly periſh: to prevent which, ſome very curious Perſons look over their Vines, ſoon after the Grapes are formed, and with a Pair of Sciſſars cut out all the ſmall ones,

ſo as to leave the others at a moderate Diſtance, whereby the Sun and Air are eaſily admitted, which diſſipates the Moiſture, and prevents their periſhing. This is a great Bearer.

12. VITIS *acinis rubris nigricantibus dulciſſimis. Garidel.* The Muſcat rouge, or red Frontiniac. The Berries of this Kind are of the Size of the former; but grow much thinner on the Bunches; it is higher flavoured, and, when thorough ripe, is the richeſt Grape yet known: but this muſt have a very dry Soil, and a South-eaſt Aſpect, otherwiſe it ſeldom ripens well in *England.*

13. VITIS *acinis nigricantibus dulciſſimis.* The black Frontiniac. The Berries of this Kind are leſs than the two former; but are not ſo high-flavour'd; their Juice is ſweet, and they are earlier ripe. This is a good Bearer; but the Grapes upon the ſame Bunch ſeldom ripen at the ſame time; ſo that they can't be gather'd in full Bunches; but muſt be pick'd off ſingly as they ripen.

14. VITIS *Damaſcena. H. R. Par.* The Damaſk Grape. The Berries of this Kind are very large, black, and of an oval Form; the Bunches are very large, and the Vine produces vigorous Shoots. This ripens late in *England.*

15. VITIS *præcox, acino rotundo albido dulci.* The white Sweet-water. The Berries of this Kind are large and white; the Skins are very thin, and the Juice is ſweet: this is very early ripe; but the Berries are apt to be thin upon the Bunches; for it is one of the tendereſt Sorts, when in Flower, that I have yet ſeen; ſo that if there happens bad Weather at that Seaſon, they are very ſubject to blight; and being ſo uncertain in bearing, has rendered it leſs eſteem'd than it was formerly.

16. VITIS *præcox, acino nigro, dulci & rotundo.* The black Sweet-water. This is a leſs Grape than the former; it is of a fine black Colour, and grows pretty cloſe upon the Bunches; its Juice is ſweet, and it is early ripe.

17. VITIS *alba dulcis. J. B.* The white Muſcadine. The Berries of this Kind are large, of a white Colour, and the Juice is very ſweet; the Bunches are long, and it is early ripe.

18. VITIS *Allobrogica Plinii. Car. Steph. Præd. Ruſt.* The Raiſin Grape. This is a large oval Grape of a blackiſh Colour, when ripe; the Bunches are very large, and make a fine Appearance; but never ripen well in *England.* I have known ſome Perſons who had a great Quantity of this Sort of Grape, which they commonly cut in the Middle of *October,* with pretty long Stalks to the Bunches, and hung them on Strings in Rows in their Kitchen, at ſuch a Diſtance as not to touch each other; and about *Chriſtmas* theſe Grapes would be ſo ripen'd by the Warmth of the Room, as to eat extremely well.

19. VITIS *acino rubro duriori, ſapore dulci. Garidel.* The *Greek* Grape. This is a middle-ſiz'd Grape, of a deep-red Colour; the Skin is very tough, and the Stones are ſmall: this is by many People call'd the Brick Grape. In a kindly Seaſon, when theſe Grapes ripen well, they make excellent Wine; but it muſt have a good Wall, otherwiſe it will not ripen in *England.*

20. VITIS *pergulana uva perampla, acino oblongo duro, majori & ſubviridi. Garidel.* The Pearl Grape, call'd in *Provence, Pendoulau,* or *Vin de Ponſo.* This is a large, oblong Grape, of a greeniſh-white Co-

lour; the Juice has a Mixture of ſweet and ſour, and it is late ripe.

21. Vitis *uva perampla, acinis nigricantibus majoribus.* The *St. Peter's* Grape, or Heſperian. The Berries of this Sort are very large, round, and of a deep-black Colour when ripe; the Bunches are very large, and have two Shoulders to them; the Juice is very rich, and a little ting'd with Red; the Leaves of this Sort are remarkably jagged, ſo as to be known when there is no Fruit upon the Vines: it is late ripe. I believe this is the ſame Sort which the *French* call *Gros Noir d'Eſpagne*, i. e. Great Black *Spaniſh*.

22. *La Malvoiſe, i. e. Malmſey* Grape, is a middle-ſiz'd Fruit, of a muddy-red Colour; its Juice is very rich and ſoft; the Bunches are large; and it is a great Bearer: this ripens toward the Latter-end of *September*.

23. *Malvoiſe Muſquée, i. e.* the *Malmſey Muſcadine.* This is a middle ſiz'd Grape, rather long than round, of a rich muſky Flavour when ripe. This is one of the Sorts of Grapes from which the *Madeira* Wine is made. It ripens late in *England*.

24. The red *Hamburgh* Grape. The Berries of this Kind are large, and of a rediſh Colour, cover'd with a Flue; the Bunches are large; and it is a good Bearer. This ripens toward the End of *September*, and is a fine Grape. It was brought into *England* by Mr. *Warner* of *Rotherhith*, who hath ſupply'd many curious Perſons with it.

25. The black *Hamburgh*, or Warner Grape. This has a middle ſiz'd Berry, rather long than round, of a fine black Colour, when ripe; the Juice is very rich, ſomewhat inclineing to a muſky Flavour. This ripens about the Middle of *September*. It was brought into *England* by Mr. *Warner*, with the former.

26. *Raiſin Suiſſe, i. e.* The *Switzerland* Grape. This is preſerv'd only as a Curioſity; the Fruit of this Kind are ſtriped with White and Black, and ſometimes divided into Quarters of thoſe Colours; and many times half the Bunch is white, and the other half black; and ſome intire Bunches are white, and others black; ſo that it appears as if two Kinds had been grafted on the ſame Root. The Fruit is good for little but Shew; therefore one Plant of this Kind is enough in a Garden.

27. The White Muſcat, or Frontiniac of *Alexandria*, by ſome call'd the *Jeruſalem* Muſcat, and Groſs Muſcat. The Berries are of an oval Shape, and very large; they grow very looſe on the Bunches, are very fleſhy and firm, and, when ripe, are of a greeniſh-white, and have a delicate Flavour, ſomewhat like the white Frontiniac, but not quite ſo ſtrong: this, being a very large Grape, rarely ripens in *England* without ſome Aſſiſtance: but as it is an excellent Fruit when ripe, it merits a Place againſt Hot-walls; where, with a little artificial Heat, it will ripen very well.

28. The Red Muſcat, or Frontiniac of *Alexandria*, by ſome call'd Red *Jeruſalem* Muſcat. This is not quite ſo late in ripening as the former; therefore is more eſteem'd about *Paris*, where, againſt good Walls, it ripens very well without any artificial Heat. The Berries of this Kind are not quite ſo large as thoſe of the White; but they are of the ſame Form, and are equal in Goodneſs.

29. The White *Melie* Grape. The Berries of this Sort are of a middle Size, ſomewhat oval-ſhaped, and grow pretty cloſe on the Bunches. When theſe are ripe, they are

of a greeniſh-white, cover'd with a Flue, which wipes off: the Juice is very ſweet, and makes an excellent white Wine. This ripens very well againſt Walls; and in a good Seaſon will ripen on the Eſpaliers, or in Vineyards.

30. The White Morillon. This is a middle-ſiz'd Grape, almoſt round, and grows pretty cloſe on the Bunches: the Juice is well flavour'd, but the Skin is tough. This ripens very well againſt good Walls.

31. The *Alicant* Grape. This is a large Fruit, of a deep-red Colour, cover'd with a blue Flue; the Bunches are alſo very large, and the Grapes grow ſparſly on them. The Juice is rich and vinous, when the Grapes are thoroughly ripe; which ſeldom happens in this Country, unleſs they are brought forward with an artificial Heat. This is the Sort of Grape of which the ſtrong *Spaniſh* Wine is made.

32. The White Auvernat. This is in Shape very like the black Auvernat Grape: it grows pretty cloſe on the Bunches, and is of a muddy white Colour when ripe. The Juice of this Sort is not ſo palatable to eat as many others; but it makes an excellent white Wine.

33. The Grey Auvernat is alſo ſhaped ſomewhat like the former; but it is of a pale murry Colour, inclining to brown. This Sort produces its Grapes looſer on the Bunches than the former, and ripens ſooner; ſo it is better to plant for Vineyards, becauſe it ſeldom fails to ripen in a good Aſpect.

34. The Raiſin Muſcat. This is a large oblong pointed Grape, whoſe Berries are firm and fleſhy, and are looſely placed on the Bunches. It is a very late Fruit, ſo will not ripen in *England* without the Aſſiſtance of an Hot-wall. This Sort of Grape is frequently brought over from *Portugal*; and is ſold in Winter in the *London* Markets.

Beſide thoſe here mention'd, there are a great Variety of other Sorts, which are the Produce of warmer Countries; ſome of which have been introduc'd lately into *England*; but as it is uncertain at preſent, how theſe will ripen in this Climate, I thought it proper to omit mentioning them in this Place; beſides, it is very probable, that many of them may prove the ſame we already have, under different Names; for as theſe Fruits are brought from different Countries, ſo they ſeldom come with the ſame Names; and it is this haſty Temper to increaſe the Number of Sorts, which has confounded the preſent Catalogues of Fruits.

All the Sorts of Vines are propagated either from Layers or Cuttings, the former of which is greatly practis'd in *England*; but the latter is what I would recommend, as being much preferable to the other: for the Roots of Vines do not grow ſtrong and woody, as in moſt Sorts of Trees, but are long, ſlender, and plain; ſo that when they are taken out of the Ground, they ſeldom ſtrike out again, but ſhrivel and dry; ſo that they rather retard than help the Plants in their Growth, by preventing the new Fibres from puſhing out; for which Reaſon I had rather plant a good Cutting than a rooted Plant, provided it be well choſen; and there is leſs Danger of its not growing.

But as there are few Perſons who make Choice of proper Cuttings, or at leaſt who form their Cuttings rightly, in *England*; ſo it will be proper to give Directions for this Work before I proceed. You ſhould always make choice of ſuch Shoots as are ſtrong and well ripened, of the laſt Year's Growth; theſe ſhould be cut from the old Vine, juſt below the Place where they were produced, taking a Knot of the former Year's Wood, which ſhould be pruned ſmooth; then you ſhould cut off the Upper-part of the Shoots, ſo as to leave the Cutting about ſixteen Inches long: when the old Wood is cut at both Ends, near the young Shoot, the Cutting will reſemble a little Mallet; from whence *Columella* gives the Title of *Malleolus* to the Vine-cuttings: but, in making the Cuttings after this manner, there can be but one taken from each Shoot; whereas moſt Perſons cut them into Lengths of about a Foot, and plant them all; which is very wrong; for the Upper-part of the Shoots is never ſo well ripened as the Lower-part, which was produc'd early in the Spring; ſo that if they take Root, they never make ſo good Plants; for the Wood of thoſe Cuttings, being ſpongy and ſoft, admits the Moiſture too freely; whereby the Plants will be luxuriant in Growth; but never ſo fruitful as ſuch whoſe Wood is cloſer, and more compact; nor will the Upper-part of the Shoots make ſo good Roots, as thoſe which have a Joint of the old Wood.

When the Cuttings are thus prepar'd, they ſhould be plac'd with their Lower-part into the Ground in a dry Place, laying ſome Litter about their Upper-parts, to prevent them from drying: in this Situation they may remain until the Beginning of *April* (which is the beſt time for planting them), when you ſhould take them out, and waſh them from the Filth they have contracted; and if you find them very dry, you ſhould let them ſtand with their Lower-parts in Water, ſix or eight Hours, which will diſtend their Veſſels, and diſpoſe them for taking Root. Then ſet about preparing the Ground where the Plants are deſign'd to remain (whether againſt Walls, or for Standards); for they ſhould not be removed again. But in this Place, I ſhall confine myſelf only to ſuch as are planted either againſt Walls or Pales, for eating.

In preparing the Ground, you ſhould conſider the Nature of the Soil, which, if ſtrong, and inclinable to Wet, is by no means proper for Grapes; but where it thus happens, you ſhould open a Trench againſt the Wall, which ſhould be fill'd with Lime-rubbiſh, the better to drain off the Moiſture; then raiſe the Border with freſh light Earth, about a Foot thick; ſo that it may be at leaſt a Foot above the Level of the Ground; then you ſhould open the Holes about ſix Feet Diſtance from each other, putting one good ſtrong Cutting into each Hole, which ſhould be laid a little ſloping, that their Tops may incline to the Wall: but muſt be put in ſo deep, that the uppermoſt Eye may be level with the Surface of the Ground: for when there are two or three Eyes left above-ground, as is the common Method uſed by the *Engliſh* Gardeners, they all attempt to ſhoot; ſo that the Strength of the Cutting is divided to nouriſh ſo many Shoots; whereas, on the contrary, by burying the whole Cutting in the Ground, the Sap is all employ'd on one ſingle Shoot, which conſequently will be much ſtronger; beſides, the Sun and Air are apt to dry that Part of the Shoots which remains above-ground, and ſo often prevent their Buds from ſhooting.

Then, having plac'd the Cuttings into the Ground, you ſhould fill up the Hole, gently preſſing down the Earth with your Foot, and raiſe a little Hill juſt upon the Top of the Cutting, to cover the upper Eye quite over, which will prevent it from drying. This being done, there is nothing more neceſſary, but to keep the Ground clear from Weeds, until the Cuttings begin to ſhoot; at which time you ſhould look over them carefully, to rub off any dangling Shoots, if ſuch are produc'd, and faſten the main Shoot to the Wall; which ſhould be conſtantly faſten'd up, as it is extended in Length, to prevent its breaking, or hanging down. You muſt continue alſo, during the Summer-ſeaſon, conſtantly rubbing off all lateral Shoots which are produc'd, leaving only the firſt main Shoot; and be ſure to keep the Ground conſtantly clear from Weeds, which, if ſuffered to grow, will exhauſt the Goodneſs of the Soil, and ſtarve the Cuttings.

The *Michaelmas* following, if your Cuttings have produc'd ſtrong Shoots, you ſhould prune them down to two Eyes, which, tho' by ſome People thought to be too ſhort, yet I am ſatisfy'd, from ſeveral Experiments, to be the beſt Method: the Reaſon for adviſing the pruning the Vines at this Seaſon, rather than deferring it till Spring, is, becauſe the tender Parts of thoſe young Shoots, if left on, are ſubject to decay in Winter, and imbibe ſome noxious Matter from the Air, which greatly weakens their Roots; ſo that if they are cut off early in Autumn, the Wounds will heal over before the bad Weather, and thereby the Roots will be greatly ſtrengthen'd.

In the Spring, after the cold Weather is paſs'd, you muſt gently dig up the Borders, to looſen the Earth; but you muſt be very careful in the doing of this, not to injure the Roots of your Vines: you ſhould alſo raiſe the Earth up to the Stems of the Plants, ſo as to cover the old Wood, but not ſo deep as to cover either of the Eyes of the laſt Year's Wood. After this they will require no farther Care until they begin to ſhoot, when you ſhould look over them carefully, to rub off all weak dangling Shoots, leaving no more than the two Shoots, which are produc'd from the two Eyes of the laſt Year's Wood, which ſhould be faſten'd to the Wall; and ſo from this, until the Vines have done ſhooting, you ſhould look them over once in three Weeks, to rub off all lateral Shoots, as they are produc'd, and to faſten the two main Shoots to the Wall, as they are extended in Length, which muſt not be ſhorten'd before the Middle of *July*, when it will be proper to nip off their Tops, which will ſtrengthen the lower Eyes. And during the Summer-ſeaſon you muſt conſtantly keep the Ground clear from Weeds; nor ſhould you permit any Sort of Plants to grow near the Vines; which would not only rob them of Nouriſhment, but ſhade the lower Parts of the Shoots, and thereby prevent their ripening; which will not only cauſe their Wood to be ſpongy and luxuriant, but render it leſs fruitful.

At *Michaelmas* you ſhould prune theſe again, leaving three Buds to each of the Shoots, provided they are ſtrong; otherwiſe it is better to ſhorten them down to two Eyes; for it is a very wrong Practice to leave much Wood upon young Vines, or to leave their Shoots too long, which greatly weakens the Roots; then you ſhould faſten them to the Wall, drawing each of them out horizontally from the Stem; and, in the Spring, dig the Borders as before.

The third Seaſon you muſt go over the Vines again, as ſoon as they begin to ſhoot, rubbing off all Danglers, as before, and training in the leading Shoots, which this Seaſon may be ſuppoſed to be two from each Shoot of the laſt Year's Wood; but if they attempt to produce two Shoots from one Eye, the weakeſt of them muſt be rubbed off; for there ſhould never be more than one allow'd to come out of an Eye. If any of them produces Fruit, as many times they will the third Year, you ſhould not ſtop them, ſo ſoon as is generally practiſed upon the bearing Shoots of old Vines, but permit them to ſhoot forward till *Midſummer*; at which time you may pinch off the Tops of the Shoots; for if this were done too ſoon, it would ſpoil the Buds for the next Year's Wood, which in young Vines muſt be carefully preſerv'd, becauſe there are no Shoots laid in on purpoſe for Wood, as is commonly practis'd on old Vines.

During the Summer you muſt conſtantly go over your Vines, and diſplace all weak lateral Shoots as they are produc'd, and carefully keep the Ground clear from Weeds, as was before directed, that the Shoots may ripen well: which is a material thing to be obſerv'd in moſt Sorts of Fruit-trees, but eſpecially in Vines; which ſeldom produce any Fruit from immature Branches. Theſe things, being duly obſerv'd, are all that is neceſſary in the Management of young Vines; I ſhall therefore proceed to lay down Rules for the Government of grown Vines, which I ſhall do as briefly as poſſible. And,

Firſt, Vines rarely produce any bearing Shoots from Wood that is more than one Year old; therefore great Care ſhould be taken to have ſuch Wood in every Part of the Trees; for the Fruit are always produc'd upon Shoots which come out from the Buds of the laſt Year's Wood; ſo that it is always upon the ſame Year's Shoots. The Method commonly practis'd by the Gardeners in *England* is, to ſhorten the Branches of the former Year's Growth, down to three or four Eyes, at the time of pruning; tho' there are ſome Perſons, who leave theſe Shoots four or five Eyes long; and affirm, that by this Practice they obtain a greater Quantity of Fruit: but this is very wrong, ſince it is impoſſible, that one Root can nouriſh forty or fifty Bunches of Grapes, ſo well as it can ten or twelve; ſo that what is gotten in Number, is loſt in their Magnitude; beſides, the greater Quantity of Fruit there is left on Vines, the later they are ripen'd, and their Juice is not ſo rich. And this is well known in the Wine-countries, where there are Laws enacted to direct the Quantity of Shoots, and the Number of Eyes that thoſe are to have upon each Shoot, leſt, by overbearing them, they not only exhauſt and weaken the Roots, but thereby render the Juice weak, and ſo deſtroy the Reputation of their Wine.

Wherefore the beſt Method is, to leave the bearing Shoots about four Eyes in Length, becauſe the lowermoſt never produce, and three Buds are ſufficient; for each of theſe will produce two or three Bunches; ſo that from each of thoſe Shoots there may be expected ſix or eight Bunches, which is a ſufficient Quantity. Theſe Shoots muſt be laid in about eighteen Inches aſunder; for if they are cloſer, when the Side-ſhoots are produc'd, there will not be room enough to train them in againſt the Wall, which ſhould always be obſerv'd; and as their Leaves are very ry large, the Branches ſhould be left at a proportionable Diſtance, that they may not croud or ſhade each other.

In Pruning, you ſhould always obſerve to make the Cut juſt above the Eye, ſloping it backward from it, that if it ſhould bleed, the Sap might not flow upon the Bud: and where there is an Opportunity of cutting down ſome young Shoots to two Eyes, in order to produce vigorous Shoots for the next Year's Bearing, it ſhould always be done, becauſe the ſtopping of thoſe Shoots which have Fruit upon them in *May*, often ſpoils the Eyes for Bearing: and this reſerving of new Wood is what the *Vignerons* abroad always practiſe in their Vineyards. The beſt Seaſon for pruning of Vines is about the Middle or End of *October*, for the Reaſons before laid down.

The Latter-end of *April*, or the Beginning of *May*, when the Vines begin to ſhoot, you muſt carefully look them over, rubbing off all ſmall Buds which may come from the old Wood, which only produce weak dangling Branches; as alſo when two Shoots are produc'd from the ſame Bud, the weakeſt of them ſhould be diſplac'd, which will cauſe the others to be the ſtronger; and the ſooner this is done, the better it is for the Vines.

In the Middle of *May*, you muſt go over them again, rubbing off all the dangling Shoots, as before; and at the ſame time you muſt nail up all the ſtrong Branches; ſo that they may not hang from the Wall; for if their Shoots hang down, their Leaves will be turn'd the wrong Way; which, when the Shoots are afterward nail'd upright, will have their back Surface upward; and until the Leaves are turn'd again, and have taken their right Direction, the Fruit will not thrive; ſo that the not obſerving this Management, will cauſe the Grapes to be a Fortnight later before they ripen: beſides, by ſuffering the Fruit to hang from the Wall, and be ſhaded with the Cloſeneſs of the Branches, it is greatly retarded in its Growth: therefore, during the growing Seaſon, you ſhould conſtantly look over the Vines, diſplacing all dangling Branches, and wild Wood; and faſten up the other Shoots regularly to the Wall, as they are extended in Length; and toward the Latter-end of *May*, you ſhould ſtop the bearing Branches, which will ſtrengthen the Fruit, provided you always leave three Eyes above the Bunches; for if you ſtop them too ſoon, it will injure the Fruit, by taking away that Part of the Branch which is neceſſary to attract the Nouriſhment to the Fruit, as alſo to perſpire off the Crudities of the Sap, which is not proper for the Fruit to receive.

But although I recommend the ſtopping thoſe Shoots which have Fruit at this Seaſon, yet you ſhould by no means ſtop thoſe which are intended for bearing the next Year, before the Beginning of *July*, leſt, by ſtopping them too ſoon, you cauſe the Eyes to ſhoot out ſtrong lateral Branches, whereby they will be greatly injured. Theſe therefore ſhould be trained upright againſt the Wall until that time; when their Tops may be nipp'd off, to give Strength to the lower Buds.

During the Summer-ſeaſon, you ſhould be very careful to rub off all dangling Branches, and train up the Shoots regularly to the Wall, which will greatly accelerate the Growth of the Fruit; and alſo admit the Sun and Air to them, which is abſolutely neceſſary to ripen, and give the Fruit a rich Flavour; but you muſt never diveſt the Branches of their Leaves, as is the Practice of ſome Perſons; for altho' the admitting of the Sun is neceſſary to ripen them, yet if they are too much expoſed thereto, their Skins will be tough, and they will rarely ripen: beſides, the Leaves being abſolutely neceſſary to nouriſh the Fruit, by taking them off, the Fruit is ſtarv'd, and ſeldom comes to any Size, as I have ſeveral times obſerv'd; therefore a great Regard ſhould be had to the Summer Management of the Vines, where Perſons are deſirous to have their Fruit excellent, and duly ripen'd.

When the Fruit are all gather'd, you ſhould prune the Vines, whereby the Litter of their Leaves will be intirely remov'd at once, and the Fruit will be the forwarder the ſucceeding Year, as has been before obſerv'd.

As many of the richeſt and beſt Sorts of Grapes will not ripen in *England*, unleſs the Seaſon proves very warm, or the Soil and Situation are very favourable; ſo there have been many Hot-walls built to accelerate this Fruit, and bring it to full Perfection by artificial Heat; and as theſe ſucceed very well, when they are properly contriv'd, and the Vines rightly manag'd, I ſhall here give proper Directions, which, if duly attended to, will be ſufficient to inſtruct Perſons in both.

The Method of building Hot-walls will be treated under the Article *Wall*; ſo I ſhall paſs it over in this Place, and proceed to the preparing of the Ground for planting. The Borders againſt theſe Hot-walls ſhould have the Earth taken out two Feet deep (provided the Ground is dry), otherwiſe one Foot will be ſufficient; becauſe in wet Land the Borders ſhould be raiſed at leaſt two Feet above the Level of the Ground, that the Roots of the Vines may not be injured by the Wet. When the Earth is taken out, the Bottom of the Trench ſhould be filled with Stones, Lime-rubbiſh, *&c.* a Foot and half thick, which ſhould be levell'd and beaten down pretty hard. The Trenches ſhould be made five Feet wide at leaſt, otherwiſe the Roots of the Vines will in a few Years extend themſelves beyond the Rubbiſh; and finding an eaſy Paſſage downward, will run into the moiſt Ground, and thereby imbibe ſo much Wet, as to leſſen the vinous Flavour of the Grapes. But before the Rubbiſh is filled into the Trench, it is a better Method to raiſe a nine-inch Wall, at five Feet Diſtance from the Hot-wall, which will keep the Rubbiſh from intermixing with the neighbouring Earth, and alſo confine the Roots of the Vines to the Border in which they are planted, ſo that they cannot reach to the Moiſture of the Ground about them. This nine-inch Wall ſhould be rais'd to the Height of the intended Border; ſo will be of great Uſe to lay the Plate of Timber of the Frames upon, which will be neceſſary to cover the Vines when they are forced, whereby the Timbers will be better preſerv'd from rotting; and where the Borders are rais'd to any conſiderable Height above the Level of the Ground, theſe Walls will preſerve the Borders from falling down into the Walks. But in carrying up of theſe Walls, it will be proper to leave little Openings, about eight or ten Feet Diſtance, to let the Water paſs off; becauſe when the Rubbiſh at the Bottom of the Trench unites and binds very hard, the Water cannot eaſily find a Paſſage through it: therefore it will be the better Method to leave theſe ſmall Paſſages in the Wall, leſt the Moiſture, being confin'd at Bottom, ſhould be pent up as in a Ditch; which will be of ill Conſequence to the Vines.

When the Walls are finiſh'd, and thoroughly dry, the Rubbiſh ſhould be fill'd in, as before directed; then there ſhould be freſh light Earth laid on, about a Foot and an half thick, which will be a ſufficient Depth of Soil for the Vines to root in. Theſe Borders ſhould be thus prepar'd at leaſt a Month or ſix Weeks before the Vines are planted, that they may have time to ſettle. The beſt time to plant them, is about the End of *March*, or the Beginning of *April*, according as the Seaſon proves early or late. Theſe I would alſo adviſe to be planted with Cuttings, rather than rooted Plants, for the Reaſons before aſſign'd; but there ſhould be two Cuttings put into each Hole, leſt one of them ſhould fail; for if both ſhould ſucceed, the weakeſt of them may be eaſily drawn out the following Spring. Theſe Cuttings ſhould be well choſen from good bearing Vines, and the Shoots ſhould be well ripen'd, otherwiſe they will never make good Plants. The Diſtance theſe Vines ſhould be allowed, is the ſame as for common Walls; *i. e.* about ſix Feet. In planting them there ſhould be Holes open'd with a Spade, about fourteen or fifteen Inches deep; for if there be but three or four Inches of good Earth under the Foot of the Cuttings, it will be ſufficient. The two Cuttings ſhould be laid in the Hole a little ſloping, but in ſuch a manner as not to touch or croſs each other; becauſe, if they do, when one of them is taken away the following Spring, it cannot be done without diſturbing the other. Then the Earth ſhould be filled into the Holes, and gently preſſed with the Foot to the Cuttings, and raiſed in an Heap over them, ſo as juſt to cover the uppermoſt Eyes of the Cuttings. Afterward lay a little Mulch on the Surface of the Ground about the Cutting, to prevent the Sun and Air from drying the Earth; and if the Spring ſhould prove very dry, they ſhould have ſome Water once a Week, which will be as often as theſe Cuttings require it; for nothing will hurt them ſooner than too much Water, which rots their Bark, and deſtroys them. If theſe Cuttings are well choſen, and the Inſtructions here laid down duly obſerv'd, they will make ſtrong Shoots the firſt Summer: for I have frequently planted Cuttings which have ſhot five Feet in one Year; but then I carefully rubb'd off all the ſide-dangling Shoots as they were produc'd, and never permitted more than one Shoot to remain on each Cutting; which is what ſhould always be obſerv'd by thoſe who have the Management of Vines. With this Direction there will be little Hazard of the Cuttings taking Root; for in upward of five hundred Cuttings, which I receiv'd from *Italy*, and which had been cut off from the Vines in the Beginning of *November*, wrapp'd up in Moſs, and put on board the Ship (which did not arrive at the Port of *London* until *March*, ſo that they were full four Months cut off before they were planted), there were not twenty of the Number which failed; and many of them ſhot above ſix Feet the firſt Seaſon.

As I have directed the pruning of Vines to be performed in Autumn (which is without Diſpute the beſt Seaſon for this Work); ſo, in preſerving of the Cuttings till the planting Seaſon, I have adviſed them to be cut to their Lengths, and their Ends laid into the Ground, and then cover'd with Litter to keep the Air from them: but, ſince, I have found it a much better Method not to ſhorten the Shoots, from which the Cutting is to be made, but lay their Ends juſt into the Ground, about two Inches deep, and ſo leave them at full Length, only obſerving to cover them with dry Litter or Peas-haulm in froſty dry Weather; though in moiſt Weather the Covering ſhould not remain on, becauſe it would make the Cuttings grow mouldy, which would greatly injure them. Then in the Spring, when they are to be planted, they ſhould be taken out of the Ground, and their Upper-part cut off, ſo as to reduce them to about fourteen Inches in Length, according to the Diſtance of the Buds or Eyes; for thoſe Cuttings, whoſe Buds grow pretty cloſe together, need not be left more than one Foot long; but in others fourteen Inches will be full ſhort. The leaving the Upper-part of the Shoots on all the Winter, is of great Service to the Cuttings; becauſe when they are cut off in Autumn, the Air penetrates the wounded Part, and greatly injures the lower Eyes.

The Management of theſe Vines, for the three firſt Years after planting, being the ſame as is practis'd for thoſe againſt common Walls, I ſhall not repeat it in this Place, having fully treated of that already; only will obſerve, that, during theſe three Years, the Vines ſhould be encourag'd as much as poſſible, and the Shoots not left too long, nor too many in Number on each Root, that they may be duly ripen'd, and prepar'd for bearing the fourth Year, which is the ſooneſt they ſhould be forced; for when any Sorts of Fruit-trees are forced by Fire too young, they ſeldom continue above three or four Years, and, during that time, produce very weak Shoots; and what Fruit they produce, is ſmall, and not well-flavour'd; ſo that, in being over-haſty to ſave a Year or two, very often the whole Deſign is loſt; for, unleſs the Trees are in a proper Condition to bear much Fruit, it is not worth while to make Fires for a ſmall Quantity of ſtarved ill-taſted Fruit; the Expence and Trouble being the ſame for ten or twelve Bunches of Grapes, as it will be for an hundred or more.

Theſe Vines ſhould not be forc'd every Year; but with good Management they may be forc'd every other Year; though it would be yet better, if it were done only every third Year: therefore, in order to have a Supply of Fruit annually, there ſhould be a ſufficient Quantity of Walling built, to contain as many Vines as will be neceſſary for two or three Years; ſo that by making the Frames in Front moveable, they may be ſhifted from one Part of the Wall to another, as the Vines are alternately forced. Therefore I would adviſe about forty Feet in Length of Walling, to be each Year forced, which is as much as one Fire will heat; and when the Vines are in full Bearing, will ſupply a reaſonable Quantity of Grapes for a middling Family.

In moſt Places where theſe Hot-walls have been built, they are commonly planted with early Kinds of Grapes, in order to have them early in the Seaſon; but this, I think, is hardly worth the Trouble; for it is but of little Conſequence to have a few Grapes earlier by a Month or ſix Weeks, than thoſe againſt common Walls; therefore I ſhould adviſe, whenever a Perſon is willing to be at the Expence of theſe Walls, that they may be planted with ſome of the beſt Kinds of Grapes, which rarely come to any Perfection in this Country, without the Aſſiſtance of ſome artificial Heat; of which the following Sorts are the moſt valuable.

The Red Muſcat of *Alexandria*.
The White Muſcat of *Alexandria*.
The Raiſin Muſcat, or *Frontiniac*.
The Red *Frontiniac*.
The Griſly *Frontiniac*.
The White *Frontiniac*.
The Black *Frontiniac*.
The *Malmſey* Muſcadine.

When the Vines which are planted againſt the Hot-walls are grown to full Bearing, they muſt be pruned, and managed after the ſame manner as hath been directed for thoſe againſt common Walls; with this Difference only; *viz.* that thoſe Seaſons when they are forced, the Vines ſhould be carefully managed in the Summer for a Supply of good Wood, againſt the time of their being forced; ſo that it will be the better Method to diveſt the Vines of their Fruit, in order to encourage the Wood: for as few of the Sorts will ripen without Heat, it is not worth while to leave them on the Vines, during the Seaſons of reſting, except it be the common *Frontiniacs*, which in a good Seaſon will ripen without artificial Heat; but of theſe Sorts I would not adviſe many Grapes to be left on; becauſe as the Deſign of reſting the Vines is, to encourage and ſtrengthen them; therefore all poſſible Care ſhould be had, that the young Wood is not robbed by overbearing; for thoſe Years when the Vines are forced, the Joints of the young Wood are generally drawn farther aſunder, than they ordinarily grow in the open Air; ſo that when they are forc'd two or three Years ſucceſſively, the Vines are ſo much exhauſted, as not to be recover'd into a good bearing State, for ſome Years; eſpecially if they are forc'd early in the Seaſon, or where great Care is not taken in the Summer, to let them have a proper Share of free Air, to prevent their being drawn too much, and to ripen their Shoots. Thoſe Years when the Vines are forc'd, the only Care ſhould be to encourage the Fruit, without having much regard to the Wood; ſo that every Shoot ſhould be pruned for Fruit, and none of them ſhortened for a Supply of young Wood; becauſe they may be ſo manag'd in the other Year's Pruning, as to repleniſh the Vines with new Wood. Thoſe Vines which are deſign'd for Forcing in the Spring, ſhould be pruned early the Autumn before; that the Buds which are left on the Shoots, may receive all poſſible Nouriſhment from the Vine; and at the ſame time the Shoots ſhould be faſten'd to the Trelaſe in the Order they are to lie; but the Glaſſes ſhould not be placed before the Vines till about the End of *January*: at which time alſo the Fires muſt be lighted: for if they are forced too early in the Year, they will begin to ſhoot before the Weather will be warm enough to admit Air to the Vines; which will cauſe the young Shoots to draw out weak, and thereby their Joints will be too far aſunder; ſo conſequently there will be fewer Grapes on them, and thoſe Bunches which are produced will be ſmaller, than when they have a ſufficient Quantity of Air admitted to them every Day.

If the Fires are made at the time before directed, the Vines will begin to ſhoot the Latter end of *February*; which will be ſix Weeks earlier than they uſually come out againſt the common Walls; ſo that by the time that other Vines are ſhooting, theſe will be in Flower; which will be early enough to ripen any of theſe Sorts of Grapes perfectly well. The Fires ſhould not be made very ſtrong in theſe Walls; for if the Air is heated to about ten Degrees above the temperate Point, on the Botanical Thermometers, it will be ſufficiently warm to force out the Shoots leiſurely; which is much better than to force them violently. Theſe Fires ſhould not be continued in the Day-time, unleſs the Weather ſhould prove very cold, and the Sun not appearing to warm the Air; at which times it will be proper to have ſmall Fires continued all the Day; for where the Walls are rightly contrived, a moderate Fire made every Evening, and continued till Ten or Eleven of the Clock at Night, will heat the Wall, and warm the incloſed Air to a proper Temperature; and as theſe Fires need not be continued longer than about the Middle or End of *May* (unleſs the Spring ſhould prove very cold), ſo the Expence of the Fire will not be very great; becauſe they may be contrived to burn either Coal, Wood, Turf, or almoſt any other Sort of Fuel; tho' where Coal is to be had reaſonable, it is the eveneſt Fuel for theſe Fires, and will not require much Attendance.

When the Vines begin to ſhoot, they muſt be frequently looked over to faſten the new Shoots to the Trelaſe, and to rub off all dangling Shoots: in doing of which great Care muſt be taken; for they are very tender, and very ſubject to break when any Violence is offer'd. The Shoots ſhould alſo be trained very regular, ſo as to lie as near as poſſible at equal Diſtances, that they may equally enjoy the Benefit of the Air and Sun; which is abſolutely neceſſary for the Improvement of the Fruit. When the Grapes are formed, the Shoots ſhould be ſtopped at the ſecond Joint beyond the Fruit, that the Nouriſhment may not be drawn away from the Fruit, in uſeleſs Shoots, which muſt be avoided as much as poſſible in theſe forced Vines, upon which no uſeleſs Wood ſhould be left; which will ſhade the Fruit, and exclude the Air from it by their Leaves.

As the Seaſon advances, and the Weather becomes warm, there ſhould be a proportionable Share of free Air admitted to the Vines every Day; which is abſolutely neceſſary to promote the Growth of the Fruit; but the Glaſſes ſhould be ſhut cloſe every Night, unleſs in very hot Weather; otherwiſe the cold Dews in the Night will retard the Growth of the Fruit. The Bunches of the White *Frontiniac*, and the Raiſin Muſcat, ſhould alſo be looked over, and the ſmall Grapes cut out with Sciſſars, in order to thin them; for theſe Sorts grow ſo cloſe together on the Bunches, that the Moiſture is detained between the Grapes, which often occaſions their rotting; and the Air being excluded from the Middle of the Bunches, the Grapes never ripen equally; which by this Method may be remedied, if done in time; and as theſe Grapes are protected by the Glaſſes, from the Blights which frequently take thoſe which are expos'd, there will be no Hazard in thinning theſe Grapes ſoon after they are ſet; at which time it will be eaſier for this Operation, than when the Grapes are grown larger, and conſequently will be cloſer together. But in doing of this, the Bunches muſt not be roughly handled; for if the Grapes are the leaſt bruiſed, or the Blue which there naturally is upon them, be rubbed off, their Skins will harden, and turn of a brown Colour; ſo the

Fruit will never thrive after. Thereſore the Sciſſars which are uſed for this Operation, ſhould have very narrow Points, that they may be more eaſily put between the Grapes, without injuring the remaining ones. The other Sorts of Grapes which I have recommended for theſe Hot-walls, do not produce their Fruit ſo cloſe together on the Bunches; ſo they will not require this Operation, unleſs by any Accident they ſhould receive a Blight, which often occaſions a great Inequality in the Size of the Grapes; which, whenever it thus happens, will require to be remedied by cutting off the ſmall Grapes, that the Bunches may ripen equally, and appear more ſightly.

By the Beginning of *July*, theſe Grapes will be full-grown; therefore the Glaſſes may be kept off continually, unleſs the Seaſon ſhould prove very cold and wet; in which Caſe they muſt be kept on every Night, when the Days are cold or wet, and only open'd when the Weather is favourable; for as the racy vinous Flavour of theſe Fruit is increaſed by a free Air, ſo, during the time of their ripening, they ſhould have as large a Share as the Seaſon will admit to be given them. But when the cold Nights begin to come on in *Auguſt*, the Glaſſes muſt be every Night ſhut to exclude the Cold, otherwiſe it will greatly retard the ripening of the Fruit; for altho' the Vines are brought ſo forward in the Spring, as that the Fruit by this Seaſon are quite turned to their Colour; yet if they are expos'd to the cold Dews, and the morning Froſts, which frequently happen toward the Latter-part of *Auguſt*, it will prevent the Fruit from ripening ſo kindly as when they are guarded from it. When the Grapes begin to ripen, they muſt be carefully guarded againſt Birds and Waſps, otherwiſe they will be in Danger of Deſtruction in a ſhort time: to prevent which, the Vines ſhould be carefully cover'd with Nets, ſo as to exclude the Birds, which will make great Havock with the Grapes, by breaking of their Skins; and if there are a few Twigs cover'd with Birdlime, plac'd here and there on the Outſide of the Nets, it will be of Service; becauſe the Birds are often ſo bold as to attempt to break the Nets to get to the Grapes, and ſo may be entangled on theſe Twigs; from which, whenever that happens, they ſhould not be diſengaged, but ſuffer'd to remain to keep off their Companions; and if they get off themſelves, it will have the deſir'd Effect; for there will few other Birds come to the ſame Place that Seaſon, as I have more than once experienced.

As to the Waſps, the beſt Method is to hang up ſome Phials, about half filled with ſugar'd Water, and rub the Necks of the Phials with a little Honey, which will draw all the Waſps to them; which, by attempting to get at the Liquor, will fall into the Phials, and be drowned. Theſe ſhould be carefully look'd over once in three or four Days, to take out the Waſps, and deſtroy them, and to repleniſh the Phials with Liquor. If this be duly obſerv'd, and the Phials placed in time, before the Grapes are attack'd, it will effectually prevent their being injur'd; but where theſe Precautions are not taken, the Grapes will be in Danger of being abſolutely deſtroyed: for as theſe early Grapes will turn Colour long before any others againſt common Walls, they are in much more Danger, there being no other Fruit for them in the Neighbourhood; whereas, when Grapes in general begin to ripen, there is a large Quantity in almoſt every Garden; ſo that if they deſtroy a Part in each Garden, yet there will be a greater Chance to have ſome eſcape, than where there is only one Wall for them to attack.

Theſe Sorts of Grapes, being forced in the manner before directed, will begin to ripen early in *September*, eſpecially the Black and Red *Frontiniacs*, which will be fit for the Table a Fortnight earlier than the other Sorts; but as the Deſign of forcing them is to have them in as great Perfection as poſſible in this Climate, they ſhould not be gather'd until they are thorough-ripe; for which Reaſon, ſome of the later Sorts ſhould be left on the Vines till *October*, or ſometimes longer; but then the Glaſſes ſhould be kept over them in wet and cold Weather, to protect the Fruit from it: but whenever the Weather is fair, the Glaſſes muſt be open'd to let in the free Air; otherwiſe the Damps, ariſing from the Earth at that Seaſon, will cauſe a Mouldineſs upon the Grapes, which will rot them: ſo that if the Seaſon ſhould prove very cold and wet, it will be proper to make a ſmall Fire every Night, to dry off the Damps, and prevent this Injury. By this Method the Grapes may be continued upon the Vines until the Middle or Latter-end of *November*, when ſome of the large late-ripe Sorts will be in very great Perfection. But moſt People in *England* gather their Grapes too ſoon, never ſuffering them to remain on the Vines to ripen, even in the warmeſt Seaſons; when, if they are left on till after *Michaelmas*, they will be perfectly good.

Of late Years many Perſons have planted Grapes againſt Eſpaliers, which, in ſome Places, have ſucceeded very well in good Seaſons; but if theſe are not planted in a good Soil, and to a proper Aſpect, and the Sorts rightly choſen, they ſeldom produce any Fruit which are fit to be eaten. The Soil proper to plant Vines in Eſpaliers, ſhould be the ſame as hath been directed for Vineyards; *viz.* either a chalky or gravelly Bottom, with about a Foot and half of light hazel Earth on the Top, a little ſloping to the South or South-eaſt, that the Wet may eaſily find a Paſſage, ſo as not to remain on the Ground. In ſuch a Soil ſituated to the Sun, and ſcreened from cold Winds, there are ſeveral Sorts of Grapes, which in warm Seaſons will ripen very well in *England*.

But there are ſome curious Perſons who line the Backſide of their Eſpaliers with low Reed-hedges, and others who do it with thin ſlit Deals; both of which are a good Defence to the Vines againſt Blights in the Spring, and accelerate the ripening of the Grapes; ſo that in tolerable Seaſons they will come to good Maturity. Neither of theſe Methods is very expenſive; for theſe cloſe Fences need not be more than four Feet high; becauſe the Vines, being to be managed after the ſame manner as thoſe in Vineyards, will never riſe above the Height of a Man; and the bearing Shoots muſt always be trained about two Feet above the Surface of the Ground; ſo that the Fruit-branches will be always below the Top of the cloſe Fences; and as for the upright Shoots, which are deſign'd for the next Year's Bearing, it matters not how much they riſe above the Fence; ſo theſe may have a looſe Trelaſe, to which they may be faſten'd, to prevent their overhanging of the Fruit.

In the making of theſe Kinds of cloſe Eſpaliers for Grapes, it will be proper to lay one ſtrong oaken Plank (ſuch as are procur'd in breaking up of old Ships or Barges) next the Surface of the Ground, which will laſt many Years ſound, and be very uſeful in ſupporting of the Fences. If theſe Planks are fifteen Inches broad, as they may always be readily procured; then, if the Upper-part of the Fence be Reeds, there may be two Lengths cut out of them (provided the Reeds are of a due Length), without including their Tops. In the Front of theſe Hedges ſhould be a ſlight Trelaſe, to faſten the Vines to, which may be made of Aſh-poles. The upright Poles of theſe Trelaſes need not be nearer together than eighteen Inches; and if there are three croſs Poles, at about a Foot aſunder, they will be ſufficient to faſten the bearing Shoots of the Vines at proper Diſtances, in the manner they are deſign'd to be train'd; which ſhould be in ſuch Poſitions, as that the Fruit may not be overſhadow'd by the Branches. And if the upright Poles are cut ſo long, as to be a Foot and half above the Reeds, they will be tall enough to ſupport the upright Shoots for the next Year's Bearing; which, being trained ſingly at proper Diſtances, will have the Advantage of the Sun and Air to ripen the Wood, much better than where four or five Shoots are faſten'd to the ſame Pole.

To this Trelaſe the Reeds may be faſten'd with Hoops on the Back-ſide, after the manner uſually practis'd in making of common reed Fences; and if on the Top of the Reeds there is faſten'd a thin Slip of Deal, to ſecure the Tops of the Reeds from being broken, it will preſerve them a long time. In makeing of theſe Fences the Reeds ſhould not be laid too thick; for that will not only be more Expence, but will be troubleſome to faſten, and not laſt ſo long, as when they are made of a moderate Thickneſs. Therefore, as the Reeds will be cut into two Lengths, each Bundle will ſpread about ſix Feet in Length; obſerving firſt to ſpread the Bottom-parts of the Bundles, which contain the largeſt Ends of the Reeds, the whole Length; and then the Upper-parts of the Reeds ſhould be revers'd, and ſpread in Front of the other; which will make the Upper-part of the Fence almoſt as thick as the Bottom. But neither theſe, nor the boarded Fences, need be made till the Vines are in full Bearing; which will be the fourth or fifth Year after planting, according to the Progreſs they make; during which time the Shoots may be ſupported by any common Stakes. For if the Fences are made before the Vines are planted, as is frequently practis'd, they will be half-decayed by the time the Vines are fit to bear; and before this time, the Fences are of no Uſe to them.

The Sorts of Grapes which are proper to plant againſt theſe Fences, are,

The Miller Grape.
The Black Morillon.
The Chaſſelas White.
The White Muſcadine.
The *Melie* Grape.
The Sweet Water.
The *Auvernat*, or true *Burgundy*.

Theſe, if well manag'd, will ripen very well, provided the Seaſon is tolerably good, and will come in ſoon after thoſe on the Walls; ſo that if they are taken care of, by hanging of Mats before them, when the Nights prove cold in Autumn, and are permitted to hang till *October*, the Fruit will prove very good. But where the Sweet-water Grape is planted againſt theſe Fences, they will require to be cover'd in the Spring, at the time when they are in Flower, if there ſhould be cold Nights; otherwiſe the Bunches will receive a Blaſt, which will deſtroy the greateſt Part of the Grapes; ſo that many times there will not be more than ſix or eight good Grapes on each Bunch; and the others will be ſmall ſtarved Fruit, hardly ſo large as the ſmalleſt Peas.

In planting of theſe Vines, either for open Eſpaliers, or the cloſe Fences, it ſhould be perform'd in the ſame manner as for Vineyards, which ſhould be from Cuttings planted ſix Feet aſunder, putting two into each Hole. And as theſe are only deſigned for the Table, a ſingle Row of a moderate Length will be ſufficient to ſupply a Family, where there are others againſt Walls to come before them. But where a Perſon is inclinable to have more Rows than one, they ſhould be plac'd twelve Feet aſunder, that they may equally enjoy the Sun and Air.

As to the Pruning and other Management of theſe Vines, that being the ſame as for thoſe in the Vineyard, I ſhall not repeat it in this Place, it being fully treated of before; and to which I have nothing here to add, more than that I find the Grape which is preferr'd by the moſt ſkilful *Vignerons* in *France*, and what they call the Auvernat, as before-mention'd, is the ſame which in *England* is call'd the Blue Cluſter Grape, and hath been long in this Country planted as an eating Grape againſt Walls; ſo that from theſe, Cuttings may be eaſily procur'd.

There have been many Vineyards of late Years planted in *England*; but very few of them have anſwered the Expectations of the Planters. Indeed the greater Part of them have been ſituated in Places and Soils very improper for this Purpoſe; and ſcarce any of the Perſons who have engaged in this Undertaking, have had ſufficient Knowlege how to make the Wine; ſo that in thoſe Seaſons when the Grapes have ripen'd tolerably well, the Wine which has been made from them, has been very indifferent, which has diſcouraged others from attempting to plant Vineyards in *England*: but as there may be ſome Perſons who may be inclined to make farther Trials; ſo I ſhall give ſuch Directions for the Choice of Soils and Situations, as alſo for the Culture of Vineyards, and the Method of making the Wine, as have been found to ſucceed beſt in this Country.

Of Vineyards *in* England.

The firſt and great Thing to be conſider'd in planting Vineyards, is the Choice of Soils and Situations; which if not rightly choſen, there will be little Hopes of Succeſs; for upon this the whole Affair greatly depends. The beſt Soil for a Vineyard in *England* is ſuch, whoſe Surface is a light ſandy Loam, and not above a Foot deep above the Gravel or Chalk, either of which Bottoms are equally good for Vines: but if the Soil is deep, or the Bottom either Clay, or a ſtrong Loam, it is by no means proper for this Purpoſe; for altho' the Vines may ſhoot vigorouſly, and produce a great Quantity of Grapes, yet theſe will be later ripe, fuller of Moiſture; and ſo conſequently their Juice not mature, nor well digeſted, but will abound with Crudity, which in fermenting will render the Wine ſour and ill-taſted; which is the common Complaint of thoſe who have made Wine in *England*.

Nor is a very rich, light, deep Soil, ſuch as is commonly found near *London*, proper for this Purpoſe;

becauſe the Roots of theſe Vines will be enticed down too deep to receive the Influences of Sun and Air, and hereby will take in much crude Nouriſhment; whereby the Fruit will be render'd leſs valuable, and be later ripe: which is of ill Conſequence to theſe Fruits, which are known to imbibe a great Share of their Nouriſhment from the Air, which, if replete with Moiſture (as is commonly the Caſe in Autumn) muſt neceſſarily contribute greatly to render the Juices leſs perfect: therefore great Attention ſhould be had to the Nature of the Soil upon which they are planted.

The next Thing neceſſary to be conſider'd, is the Situation of the Place; which, if poſſible, ſhould be on the North Side of a River, upon an Elevation inclining to the South, with a ſmall gradual Deſcent, that the Moiſture may the better drain off; but if the Ground ſlopes too much, it is by no means proper for this Purpoſe, but if, at a Diſtance from this Place, there are larger Hills, which defend it from the North and North-weſt Wind, it will be of great Service; becauſe hereby the Sun's Rays will be reflected with a greater Force; and the cold Winds, being kept off, will render the Situation very warm. Add to this, a chalky Surface; which if thoſe Hills do abound with (as there are many Situations in *England* which do), it will ſtill add to the Heat of the Place, by reflecting a greater Quantity of the Sun's Rays.

The Country about this ſhould be open and hilly; for if it be much planted, or low and boggy, the Air will conſtantly be fill'd with moiſt Particles, occaſion'd by the plentiful Perſpiration of the Trees, or the Exhalations from the adjoining Marſhes, whereby the Fruit will be greatly prejudic'd (as was before obſerv'd). Theſe Vineyards ſhould always be open to the Eaſt that the morning Sun may come on them to dry off the Moiſture of the Night early, which, by lying too long upon the Vines, does greatly retard the ripening of their Fruit, and renders it crude and ill-taſted. And ſince the Fruit of Vines are rarely ever injur'd by Eaſterly Winds, there will be no Reaſon to apprehend any Danger from ſuch a Situation; the South-weſt, North-weſt, and North Winds being the moſt injurious to Vineyards in *England* (as indeed they are to moſt other Fruit); ſo that, if poſſible, they ſhould be ſhelter'd therefrom.

Having made choice of a Soil and Situation proper for this Purpoſe, the next thing to be done is, to prepare it for planting: in doing of which, the following Method ſhould be obſerv'd: in the Spring it ſhould be plow'd as deep as the Surface will admit, turning the Sward into the Bottom of each Furrow; then it ſhould be well harrow'd, to break the Clods, and cleanſe it from the Roots of noxious Weeds: and after this, it muſt be conſtantly kept plow'd and harrow'd for at leaſt one Year, to render the Surface light; and hereby it will be render'd fertile, by imbibing the nitrous Particles of the Air (eſpecially if it be long expoſed thereto before it is planted): then in *March* the Ground ſhould be well plow'd again; and after having made the Surface pretty even, the Rows ſhould be mark'd out from South-eaſt to North-weſt, at the Diſtance of ten Feet from each other; and theſe Rows ſhould be croſs'd again at five or ſix Feet Diſtance, which will mark out the exact Places where each Plant ſhould be plac'd; ſo that there will be ten

Feet Row from Row, and five or ſix Feet aſunder in the Rows; nearer than which they ought never to be planted. And herein moſt People who have planted Vineyards, have greatly err'd, ſome having allow'd no more than five Feet Row from Row, and the Plants but three Feet aſunder in the Rows; and others, who think they have been full liberal in this Article, have only planted their Vines at ſix Feet Diſtance every Way: but neither of theſe have allow'd a proper Diſtance to them, as I ſhall ſhew; for, in the firſt Place, where the Rows are ſet too cloſe, there will not be room for the Sun and Air to paſs in between them to dry up the Moiſture; which, being detain'd amongſt the Vines, muſt produce very ill Effects. And, ſecondly, where the Vines are plac'd in exact Squares ſo near together as ſix Feet, there can be no room for the Current of Air to paſs between them, when their Branches are extended on each Side; and ſo conſequently the Damps in Autumn will be entangled and detained amongſt the Vines, to the great Prejudice of their Fruit. For ſince the Autumns in *England* are often attended with Rains, cold Dews, or Fogs; all proper Care ſhould be taken to remove every thing which may obſtruct the drying up the Damps which ariſe from the Ground.

The ſkilful *Vignerons* abroad are alſo ſenſible how much it contributes to the Goodneſs of their Vines to allow a large Space between the Rows; and therefore where the Quality of the Wine is more regarded than the Quantity, there they never plant their Vines at leſs than ten Feet Row from Row; and ſome allow twelve. It was an Obſervation of *Bellonius*, almoſt two hundred Years ſince, that in thoſe Iſlands of the *Archipelago*, where the Rows of Vines were placed at a great Diſtance, the Wine was much preferable to thoſe which were cloſe planted; and this he poſitively affirms to be the Caſe in moſt Countries where he had travell'd. Indeed, we need not have recourſe to Antiquity for the Certainty of ſuch Facts, when we are daily convinc'd of this Truth in all cloſe Plantations of any kind of Fruit, where it is conſtantly obſerv'd, that the Fruits in ſuch Places are never ſo well colour'd, ſo early ripe, nor near ſo well flavour'd, as thoſe produc'd on Trees, where the Air can freely circulate about them, and the Rays of the Sun have full Acceſs to the Branches, whereby their Juices are better prepar'd before they enter the Fruit.

Having thus conſider'd the Diſtance which is neceſſary to be allowed to theſe Plants, we come next to the Planting: but in order to this, the proper Sorts of Grapes ſhould be judiciouſly choſen; and in this Particular, we have egregiouſly erred in *England*. All the Vineyards at preſent planted here, are of the ſweeteſt and beſt Sort of Grapes for Eating, which is contrary to the general Practice of the *Vignerons* abroad, who always obſerve, that ſuch Grapes never make good Wine; and therefore, from Experience, make Choice of thoſe Sorts of Grapes, whoſe Juice, after fermenting, affords a noble rich Liquor; which Grapes are always obſerv'd to be auſtere, and not ſo palatable. This is alſo agreeable to the conſtant Practice of our Cyder-makers in *England*, who always obſerve, that the beſt Eating-apples make but poor Cyder; whereas the more rough and auſtere Sorts, after being preſs'd and fermented, afford a ſtrong vinous Liquor. And I believe it will be found true in all Fruits, that where the natural Heat of the Sun ripens and prepares their Juices, ſo as to render them palatable, whatever Degree of Heat theſe Juices have more, either by Fermentation, or from any other Cauſe, will render them weaker, and leſs ſpirituous. Of this we have many Inſtances in Fruits; for if we tranſplant any of our Summer or Autumn Fruits, which ripen perfectly in *England*, without the Aſſiſtance of Art, into a Climate a few Degrees warmer, theſe Fruits will be mealy and inſipid: ſo likewiſe if we bake or ſtew any of theſe Fruits, they will be good for little, loſing all their Spirit and Flavour by the additional Heat of the Fire; and ſuch Fruits as are by no means eatable raw, are hereby render'd exquiſite; and, when tranſplanted into a warmer Climate, have, by the additional Heat of the Sun, been alſo alter'd ſo as to exceed the moſt delicious of our Fruit in this Country.

From whence it is plain, that thoſe Grapes which are agreeable to the Palate for Eating, are not proper for Wine; in making of which, their Juices muſt undergo a ſtrong Fermentation: therefore ſince we have in *England* been only propagating the moſt palatable Grapes for Eating, and neglected the other Sorts, before we plant Vineyards, we ſhould take care to be provided with the proper Sorts from abroad; which ſhould be choſen according to the Sort of Wines intended to be imitated: tho' I believe the moſt probable Sort to ſucceed in *England*, is the Auvernat or true *Burgundy* Grape (which is at preſent very rare to be found in the *Engliſh* Vineyards; though it is a common Grape in the Gardens againſt Walls) This Sort of Grape is moſt preſerv'd in *Burgundy*, *Champaigne*, *Orleans*, and moſt of the other Wine Countries in *France*; and I am inform'd, that it ſucceeds very well in ſeveral Places to the North of *Paris*, where proper Care is taken of their Management: ſo that I ſhould adviſe ſuch Perſons as would try the Succeſs of Vineyards in *England*, to procure Cuttings of this Grape from thoſe Countries; but herein ſome Perſon of Integrity and Judgment ſhould be employ'd to get them from ſuch Vineyards, where no other Sorts of Grapes are cultivated; which is very rare to find, unleſs in ſome particular Vineyards of the Citizens, who are very exact to keep up the Reputation of their Wines; nothing being more common than for the *Vignerons* to plant three or four Sorts of Grapes in the ſame Vineyard, and at the time of Vintage to mix them all together; which renders their Wines leſs delicate than in ſuch Places where they have only this one true Sort of Grape. And here I would caution every one againſt mixing the Juice of more Grapes than one Sort, which will cauſe it to ferment at different times, and in different manners.

The Cuttings being thus provided (for I would always prefer theſe to Layers, or rooted Plants, for the Reaſons given at the Beginning of the Article *Vitis*), about the Beginning of *April* is the beſt Seaſon for Planting; when it will be proper to put the Lower-ends of the Cuttings in Water about three Inches, ſetting them upright for ſix or eight Hours before they are uſed; then at the Centre of every croſs Mark already made by a Line, to the Diſtance the Vines are deſign'd, ſhould be an Hole made with a Spade, or other Inſtrument, about a Foot deep, into each of which ſhould be put one ſtrong

Cutting, placing it a little ſloping; then the Hole ſhould be fill'd up with Earth, preſſing it gently with the Feet to the Cutting, and raiſing a little Hill to each about three Inches, ſo as juſt to cover the uppermoſt Eye or Bud; which will prevent the Wind and Sun from drying any Part of the Cuttings, and this upper Eye only will ſhoot; the under ones moſt of them will puſh out Roots; ſo that this Shoot will be very ſtrong and vigorous.

After they are thus planted, they will require no other Care until they ſhoot, except to keep the Ground clear from Weeds, which ſhould be conſtantly obſerv'd; but as the Diſtance between the Rows of Vines is pretty great, ſo the Ground between them may be ſown or planted with any kind of eſculent Plants, which do not grow tall, provided there is proper Diſtance left from the Vines, and Care taken, that the Vines are not injured by the Crops, or in the gathering, and carrying of them off the Ground; and this Huſbandry may be continued three or four Years, till the Vines come to Bearing; after which time there ſhould be no Sort of Crop put between them in Summer; becauſe the cleaner the Ground is kept between the Vines, from Weeds or Plants, the more Heat will be reflected to the Grapes; but after the Grapes are gather'd, there may be a Crop of Caulworts for Spring-uſe, planted between the Rows of Vines; and the cultivating of theſe will be of Uſe to the Vines, by ſtirring of the Ground: but as to Watering, or any other Trouble, there will be no Occaſion for it, notwithſtanding what ſome People have directed; for in *England* there is no Danger of their miſcarrying by Drought. When the Cuttings begin to ſhoot, there ſhould be a ſmall Stick of about three Feet long ſtuck down by each, to which the Shoots ſhould be faſten'd, to prevent their breaking, or lying upon the Ground; ſo that as the Shoots advance, the Faſtening ſhould be renew'd; and all ſmall lateral Shoots (if there are any ſuch produc'd) ſhould be conſtantly diſplac'd, and the Ground between the Vines always kept clean. This is the whole Management which is requir'd the firſt Summer.

But at *Michaelmas*, when the Vines have done ſhooting, they ſhould be pruned; for if they are left unpruned till Spring, their Shoots, being tender (eſpecially towards their upper Parts), will be in Danger of ſuffering, if the Winter ſhould prove ſevere.

This Pruning is only to cut down all the Shoots to two Eyes; and if, after this is done, the Earth be drawn up in an Hill about each Plant, it will ſtill be a greater Defence againſt Froſt.

At the Beginning of *March* the Ground between the Vines ſhould be well dug, to looſen it, and render it clean; but you ſhould be careful not to dig deep cloſe to the Vines, leſt thereby their Roots ſhould be cut or bruiſed; and at the ſame time the Earth ſhould be again laid up in an Hill about each Plant; but there muſt be care taken not to bury the two young Eyes of the former Year's Shoot, which were left to produce new Wood.

At the Beginning of *May*, when the Vines have made Shoots, there ſhould be ſome Stakes fix'd down to the Side of each Plant, which muſt be ſomewhat taller and ſtronger than thoſe of the former Year; to theſe the two Shoots (if ſo many are produc'd) ſhould be faſten'd; and all the ſmall trailing or lateral Shoots ſhould be conſtantly diſplac'd, that the other Shoots may be ſtronger; and the Ground ſhould alſo be kept very clear from Weeds, as before.

At *Michaelmas* theſe Vines ſhould be pruned again, in the following manner: thoſe of them which have produc'd two ſtrong Shoots of equal Vigour, muſt be cut down to three Eyes each; but in ſuch as have one ſtrong Shoot, and a weak one, the ſtrong one muſt be ſhorten'd to three Eyes, and the weak one to two; and ſuch Vines as have produc'd but one ſtrong Shoot, ſhould be ſhorten'd down to two Eyes alſo, in order to obtain more Wood againſt the ſucceeding Year.

In the Spring, about the Beginning of *March*, the Ground between the Vines ſhould be again dug, as before; and two Stakes ſhould be plac'd down by the Side of all ſuch Vines as have two Shoots, at ſuch Diſtance on each Side of the Plant as the Shoots will admit to be faſten'd thereto; and the Shoots ſhould be drawn out on each Side to the Stakes, ſo as to make an Angle of about forty-five Degrees with the Stem; but by no means ſhould they be bent down horizontally, as is by ſome practiſed; for the Branches, lying too near the Earth, are generally injured by the Damps which ariſe from thence, but eſpecially when they have Fruit; which is never ſo well taſted, nor ſo early ripe upon thoſe Branches, as when they are a little more elevated.

In *May*, when the Vines begin to ſhoot, they muſt be carefully look'd over, and all the weak dangling Shoots ſhould be rubb'd off as they are produc'd; and thoſe Shoots which are produc'd from ſtrong Eyes, ſhould be faſten'd to the Stakes to prevent their being broken off by the Wind. This Management ſhould be repeated at leaſt every three Weeks, from the Beginning of *May* to the End of *July*; by which means, the Shoots which are trained up for the ſucceeding Year will not only be ſtronger, but alſo better ripen'd, and prepared for Bearing, becauſe they will have the Advantage of Sun and Air, which is abſolutely neceſſary to prepare their Juices; whereas if they are crouded by a Number of ſmall dangling weak Branches, they will ſhade and exclude the Rays of the Sun from the other Shoots; and ſo, by detaining the Moiſture a longer time amongſt the Branches, occaſion the Veſſels of the young Wood to be of a larger Dimenſion; and hereby the crude Juice finds an eaſy Paſſage thro' them; ſo that the Shoots in Autumn ſeem to be moſtly Pith, and are of a greeniſh immature Nature; and where-ever this is obſerv'd, it is a ſure Sign of a bad Quality in the Vines.

The Soil alſo ſhould be conſtantly kept clean; becauſe, if there are any Vegetables (either from Weeds, or Plants of other Kinds) growing between the Vines, it will detain the Dews longer, and, by their Perſpiration, occaſion a greater Moiſture, than would be, if the Ground were intirely clear; ſo that thoſe who plant other Things between their Rows of Vines, are guilty of a great Error.

At *Michaelmas* the Vines ſhould be pruned, which Seaſon I approve of rather than the Spring (for Reaſons given already); and this being the third Year from planting, the Vines will begin to produce Fruit; therefore they muſt be pruned accordingly. Now, ſuppoſe the two Shoots of the former Year, which were ſhorten'd to three Eyes, have each of them produc'd two ſtrong Branches the Summer paſt, then the uppermoſt of theſe Shoots upon each Branch ſhould be ſhorten'd down to three good Eyes (never including the lower Eye, which is ſituate juſt above the former Year's Wood; which ſeldom produces any thing, except a weak dangling Shoot); and the lower Shoots ſhould be ſhorten'd down to two good Eyes each; theſe being deſign'd to produce vigorous Shoots for the ſucceeding Year; and the former are deſign'd to bear Fruit: but where the Vines are weak, and have not produc'd more than two or three Shoots the laſt Seaſon, there ſhould be but one of them left with three Eyes for Bearing; the reſt muſt be ſhorten'd down to two, or, if weak, to one good Eye, in order to obtain ſtrong Shoots the following Summer; for there is nothing more injurious to Vines, than the leaving too much Wood upon them, eſpecially while they are young, or the overbearing them; which will weaken them ſo much, as not to be recover'd again to a good State in ſeveral Years; though they ſhould be manag'd with all poſſible Skill.

In *March* the Ground between the Vines ſhould be well dug, obſerving not to injure their Roots by digging too deep near them; but where there are ſmall horizontal Roots produc'd on or near the Surface of the Ground, they ſhould be pruned off cloſe to the Place where they were produc'd; theſe being what the *Vignerons* call Day-roots, and are by no means neceſſary to be left on: and after having dug the Ground, the Stakes ſhould be plac'd down in the following manner: on each Side of the Vine ſhould be a Stake put in at about ſixteen Inches from the Root, to which the two Branches, which were pruned to three Eyes, each for Bearing, ſhould be faſten'd (obſerving, as was before directed, not to draw them down too horizontally); then another taller Stake ſhould be placed down near the Foot of the Vine, to which the two Shoots, which were pruned down to two Eyes, ſhould be faſten'd, provided they are long enough for that Purpoſe; but if not, when their Eyes begin to ſhoot, theſe muſt be trained upright to the Stakes, to prevent their trailing on the Ground, or being broken by the Wind.

In *May* the Vines ſhould be carefully look'd over again, at which time all weak lateral Branches ſhould be rubb'd off as they are produc'd; and thoſe Shoots which ſhew Fruit, muſt be faſten'd with Baſs to the Stakes, to prevent their being broken, until they are extended to three Joints beyond the Fruit, where they ſhould be ſtopp'd: but the Shoots which are deſign'd for bearing the following Seaſon, ſhould be kept trained upright to the middle Stake; by which Method the Fruit-branches will not ſhade theſe middle Shoots, nor will the middle Shoots ſhade the Fruit; ſo that each will enjoy the Benefit of Sun and Air.

This Method ſhould be repeated every Fortnight or three Weeks, from the Beginning of *May* to the Middle or Latter-end of *July*; which will always keep the Shoots in their right Poſition, whereby their Leaves will not be inverted, which greatly retards the Growth of the Fruit; and, by keeping the Vines conſtantly clear from horizontal Shoots, the Fruit will not be crouded with Leaves, and ſhaded, but will have conſtantly the Advantage of the Sun and Air equally, which is of great Conſequence; for where the Fruit is cover'd with theſe dangling Shoots in the Spring, and are afterward expoſed to the Air, either by diveſting theſe of their Leaves, or elſe diſplacing their Branches intirely, as is often practiſed, the Fruit will become hard, and remain at a perfect Stand for three Weeks, and ſometimes will never advance afterward, as I have ſeveral times obſerv'd; therefore there cannot be too much Care taken to keep them conſtantly in a kindly State of Growth, as the *Vignerons* abroad well know; tho' in *England* it is little regarded by the Generality of Gardeners; who, when their Grapes ſuffer by this Neglect, immediately complain of the Climate, or the Untowardneſs of the Seaſon, which is too often a Cover for Neglects of this Nature. And here I can't help taking notice of the abſurd Practice of thoſe who pull off their Leaves from their Vines, which are placed near the Fruit, in order to let in the Rays of the Sun to ripen them; not conſidering how much they expoſe their Fruit to the cold Dews, which fall plentifully in Autumn, which, being imbib'd by the Fruit, greatly retard them: beſides, no Fruit will ripen ſo well when intirely expos'd to the Sun, as when they are gently ſcreen'd with Leaves; and by the pulling off theſe Leaves, which are abſolutely neceſſary to prepare the Juices before they enter the Fruit, the groſs Parts of which are perſpired away by the Leaves, the Fruit muſt either be depriv'd of Nouriſhment, or elſe ſome of the groſs Particles will enter with the more refined Parts of the Juice, and thereby render the Fruit worſe than it would otherwiſe be, were the Leaves permitted to remain upon the Branches: for if the weak dangling Shoots are conſtantly diſplac'd as they are produc'd, the Fruit will not be too much ſhaded by the Leaves which are upon the bearing Branches.

When the Fruit is ripe, if the Stalks of the Bunches are cut half thro' a Fortnight before they are gather'd, it will cauſe the Juice to be much better, becauſe there will not be near ſo great a Quantity of Nouriſhment enter the Fruit; whereby the watry Particles will have time to evaporate, and the Juice will be better digeſted. This is practiſed by ſome of the moſt curious *Vignerons* in the South of *France*, where they make excellent Wine. But if, after the Fruit be cut, it is hung up in a dry Room upon Strings, ſo as not to touch each other, for a Month before they are preſſed, it will alſo add greatly to the Strength of the Wine; becauſe in that time a great Quantity of the watry Parts of the Juice will evaporate. This is a conſtant Practice with ſome Perſons, who inhabit in the *Tiroleſe*, on the Borders of *Italy*, where is made a moſt delicious rich Wine, as hath been atteſted by Dr. *Burnet* in his Travels; and I have heard the ſame from ſeveral Gentlemen, who have travell'd that Road ſince.

But with all the Care that can poſſibly be taken, either in the Culture of the Vines, or in making the Wine, it will not be near ſo good while the Vineyard is young, as it will be after it has been planted ten or twelve Years; and it will be conſtantly mending, until it is fifty Years old, as is atteſted by ſeveral curious Perſons abroad, as alſo by the moſt ſkilful Wine-coopers at home, who can tell the Produce of a young Vineyard from that of an old one, after it is brought to *England*, by the Colour of the Wine. This Difference is very eaſily accounted for, from the different Structure of the Veſſels of the Plants: thoſe of the young Vines, being larger, and of a looſer Texture, eaſily admit a larger Quantity of groſs Nouriſhment to paſs thro' them; whereas thoſe of old Vines, which are more woody, are more cloſely conſtricted, and thereby the Juice is better ſtrain'd in paſſing thro' them, which muſt conſequently render it much better; tho' the Grapes from a young Vineyard will be larger, and afford a greater Quantity of Juice; ſo that People ſhould not be diſcouraged, if their Wines at firſt are not ſo good as they would wiſh; ſince afterward, when the Vineyard is a few Years older, the Wine may anſwer their Expectation. As to the fermenting and managing the Wine, that is treated of particularly under the Article of *Wines*, to which the Reader is deſired to turn.

The Vineyard, being now arriv'd to a bearing State, ſhould be treated after the following manner: Firſt, in the Pruning, there ſhould never be too many Branches left upon a Root, nor thoſe too long: for altho', by doing of this, there may be a greater Quantity of Fruit produc'd, yet the Juice of theſe will never be ſo good as when there is a moderate Quantity of Fruit, which will be better nouriſh'd, and the Roots of the Plants not ſo much weaken'd; which is found to be of ſo bad Conſequence to Vineyards, that when Gentlemen abroad let out Vineyards to *Vignerons*, there is always a Clauſe inſerted in their Leaſes to direct how many Shoots ſhall be left upon each Vine, and the Number of Eyes to which the Branches muſt be ſhorten'd; becauſe were not the *Vignerons* thus tied down, they would overbear the Vines; ſo that in a few Years they would exhauſt their Roots, and render them ſo weak, as not to be recover'd again in ſeveral Years; and their Wine would be ſo bad, as to bring a Diſreputation on the Vineyard, to the great Loſs of the Proprietor.

The Number of Branches, which the *Italians* generally agree to leave upon a ſtrong Vine, are four; two of the ſtrongeſt have four Eyes, and the two weaker are ſhorten'd down to two Eyes each; which is very different from the common Practice in *England*, where it is uſual to ſee ſix or eight Branches left upon each Root, and thoſe, perhaps, left with ſix or eight Eyes to each; ſo that if theſe are fruitful, one Root muſt produce near four times the Number of Bunches which the *Italians* do ever permit; and ſo conſequently the Fruit will not be ſo well nouriſh'd, and the Roots will alſo be greatly weaken'd; as is the Caſe of all Sorts of Fruit-trees, when a greater Number of Fruit is left on, than the Trees can nouriſh.

The next thing is, conſtantly to keep the Ground perfectly clean between the Vines, never permitting any ſort of Plants or Weeds to grow there: the Ground ſhould alſo be carefully dug every Spring, and every third Year ſhould have ſome Manure, which ſhould be of different Sorts, according to the Nature of the Ground, or which can be moſt conveniently procur'd.

If the Land is ſtiff, and inclinable to bind on the Surface, then Sea-ſand, or Sea-coal Aſhes, are either of them very good Manure for it but if the Ground be looſe and dry, then a little Lime, mix'd with Dung, is the beſt Manure for it. This muſt be ſpread thin upon the Surface of the Ground before it is dug; and in digging ſhould be buried equally in every Part of the Vineyard. Theſe are much preferable to that of all Dung for Vines; ſo that it will be worth the Expence to procure either of them: and as they require manuring but every third Year, where the Vineyard is large, it may be divided into three equal Parts; each of which may be manured in its Turn, whereby the Expence will be but little every Year; whereas when the Whole is manur'd together, it will add to the Expence; and in many Places there can't be a ſufficient Quantity procur'd to manure a large Vineyard in one Year.

The Digging and Manuring ſhould always be perform'd about the Beginning of *March*; at which time all the ſuperficial or Day-roots, as they are call'd, muſt be cut off; but the larger Roots muſt not be injur'd by the Spade, *&c.* therefore the Ground cloſe to the Stem of the Vines muſt not be dug up deep. After this done, the Stakes ſhould be placed down, one on each Side the Vines, at about ſixteen Inches from their Stems; to which the longeſt bearing Branches ſhould be faſten'd, and one Stake cloſe to the Stem, to which the two ſhorter Branches ſhould be train'd upright, to furniſh Wood for the ſucceeding Year.

In the Summer they muſt be carefully look'd over, as before, rubbing off all weak dangling Shoots, and training the good ones to the Stakes regularly, as they are produc'd; and thoſe of them which have Fruit, ſhould be ſtopp'd in *May*, about three Joints beyond the Bunches; but the upright Shoots, which are deſign'd for bearing the following Year, muſt not be ſtopp'd till the Beginning of *July*, when they may be left about five Feet long; for if they are ſtopped ſooner in the Year, it will cauſe them to ſhoot out many dangling Branches from the Sides of the Eyes; which will not only occaſion more Trouble to diſplace them, but alſo will be injurious to the Eyes or Buds.

N. B. *All this Summer Dreſſing ſhould be performed with the Thumb and Finger, and not with Knives; becauſe the Wounds made by Inſtruments in Summer do not heel ſo ſoon as when ſtopp'd by gently nipping the leading Bud; which if done before the Shoot is become woody, it may be effected with great Eaſe, being very tender while young.*

When a Vineyard is thus carefully dreſſed, it will afford as much Pleaſure in viewing it as any Plantation of Trees or Shrubs whatever, the Rows being regular; and if the Stakes are exactly plac'd, and the upright Shoots ſtopp'd to an equal Height, there is nothing in Nature which will make a more beautiful Appearance: and during the Seaſon that the Vines are in Flower, they emit a moſt grateful Scent, eſpecially in the Morning and Evening; and when the Grapes begin to ripen, there will be a freſh Pleaſure ariſing in viewing of them.

But as the Beauty of Vineyards ariſes from the regular Diſpoſition of the Branches of the Vines, great Care ſhould be taken, in their Management, to train them regularly, and to provide every Year for new Wood to bear the ſucceeding Year; becauſe the Wood which has produced Fruit, is commonly cut quite away, after the Fruit is gather'd, or at leaſt is ſhorten'd down to two Eyes, to force out Shoots for the next Year, where there is not a ſufficient Number of Branches upon the Vine, of thoſe trained upright; ſo that in Summer, when the Vines are in Perfection, there ſhould be ſix upright Shoots train'd for the next Year's Wood, and three or four bearing Branches, with Fruit on them; more than theſe ought never to be left upon one Vine, for the Reaſons before given.

N. B. The *Auvernat*, or true *Burgundy* Grape, is valued in *France* before any other Sort; becauſe the Fruit never grows very cloſe upon the Bunches, therefore are more equally ripen'd; for which Reaſon it ſhould alſo be preferr'd in *England*; though, in general, thoſe Sorts are moſt eſteem'd with us that have always cloſe Bunches, which is certainly wrong; for it may be obſerv'd, that the Grapes upon ſuch Bunches are commonly ripe on one Side, and green on the other; which is a bad Quality for ſuch as are preſſed to make Wine.

I ſhall now ſubjoin a few Sorts of Vines, which are preſerv'd in ſome curious Gardens, more for the ſake of Variety, than the Value of their Fruit: theſe are,

1. VITIS *ſylveſtris Virginiana. Par. Theat.* The wild *Virginian* Grape.
2. VITIS *vulpina dicta, Virginiana alba. Pluk. Alm.* The Fox-grape, *vulgo*.
3. VITIS *alba dulcis, foliis variegatis.* The blotch-leav'd Vine.
4. VITIS *alba dulcis, limbis foliorum argentatis.* The ſtriped-leav'd Vine.
5. VITIS *quinquefolia Canadenſis ſcandens. Tourn.* The *Virginian* Vine, or common Creeper.

The firſt and ſecond Sorts grow in great Plenty in the Woods of *America*, where, I have been inform'd, are many other Sorts, ſome of which produce Fruit very little inferior to moſt of the fine Sorts which are cultivated in *Europe*; notwithſtanding which, it is generally thought impoſſible to make Wine in *America*; but this, I dare ſay, muſt proceed from a want of Skill, rather than any bad Quality in the Soil or Climate: ſo that inſtead of planting Vineyards on their looſe rich Lands (as hath been generally practis'd by the Inhabitants of thoſe Countries), if they would plant them upon riſing Ground, where the Bottom was rocky or hard near the Surface, I dare ſay they would have very good Succeſs; for the great Fault, complain'd of in thoſe Countries, is, that the Grapes generally burſt before they are fully ripe; which muſt certainly be occaſion'd by their having too much Nouriſhment; therefore, when they are planted on a poorer Soil, this will be, in part, remedied. Another Cauſe of this may proceed from the Moiſture of the Air (occaſioned by the Perſpiration of Trees, *&c.*), which, being imbibed by the Fruit, may break their Skins. This, indeed, can't be prevented until the Country is better clear'd of the Timber; but, however, this ſhould caution People not to plant Vines in ſuch Places where there are great Quantities of Woods, becauſe of this Effect which it hath on the Grapes. But to return:

Theſe two Sorts of Vines are preſerv'd in the Gardens of thoſe who are curious in Botany; but I have not ſeen either of them produce Fruit in this Country. Theſe may be propagated by Layers, which will take Root in one Year, and may be taken off, and tranſplanted in the Spring where they are to remain, which ſhould be againſt a warm Wall; becauſe if they are expoſed to much Cold in Winter, they are often deſtroy'd, eſpecially while they are young.

Their Pruning and Management is the ſame with any other Sorts of Grapes; only they ſhould have fewer Shoots, and thoſe ſhorten'd down very low: otherwiſe they will make very weak Shoots, and never arrive to any conſiderable Strength; ſo will not be capable of producing Fruit.

The two Sorts with ſtriped Leaves are alſo preſerved by thoſe who are curious in collecting a Variety of Plants. Theſe may be propagated as the other Kinds of Grapes; but are tender, and muſt have a warm Situation, otherwiſe they will not thrive; nor do the Cuttings of theſe take Root ſo readily as thoſe whoſe Leaves are plain; but as there is no very great Beauty in theſe Plants, they are ſcarcely worth cultivating, unleſs for Variety.

The fifth Sort was originally brought from *America*; but from its Hardineſs, and being eaſy to propagate, is become as common as if it were a Native of this Country.

This Plant is chiefly planted in ſmall Gardens near *London*, where it endures the Smoke better than moſt other Plants; and, being a rampant Grower, is planted againſt high Walls and Buildings, which it will cover ſooner than any other Sort of Plant; and in Summer will look green, which is what the Inhabitants of *London* are greatly pleas'd with. The Branches of this Plant will ſometimes ſhoot twenty or thirty Feet long in one Summer, and ſend forth Roots from their Joints, whereby they faſten themſelves to the Building where they are plac'd: ſo that they do not require much Trouble to ſupport them.

The only Culture they require, is to cut out all the ſmall weak Shoots in *March*, and ſhorten the ſtrong ones to about ten Feet long; which will ſtrengthen them againſt the ſucceeding Summer, and cauſe them to ſhoot vigorouſly.

This Plant may be propagated by Cuttings, which ſhould be planted in the Spring, upon a ſhady Border, where they will take Root freely; and, if water'd in dry Weather, will make a great Progreſs the ſucceeding Summer, and the Spring after may be tranſplanted where they are to remain, which may be in almoſt any Soil or Situation; for they are very hardy Plants.

VITIS IDÆA. *Vide* Vaccinium.

VITIS SYLVESTRIS. *Vide* Clematis.

ULEX, Furze, Gorz, or Whins.

The *Characters* are;

It hath a butterfly (or pea-bloom) Flower, conſiſting of the Standard, the Keel, and the Wings, included in a permanent Empalement, which has two oval concave Leaves: the Standard is large, erect, and vertically heart-ſhaped: the Wings are oblong, blunt, and ſhorter than the Standard: the Keel is divided into two Parts, which are obtuſe, and incloſe the ten Stamina *with the Pointal; nine of the* Stamina *being joined in one Body, the other ſtanding ſingle: the Pointal afterward becomes an oblong ſwelling Pod, incloſing ſeveral kidney-ſhap'd Seeds.*

The *Species* are;

1. Ulex *folio ſub ſingulis ſpinis ſubulato plano acuto. Hort. Cliff.* The common Furze, Whins, or Gorz.

2. Ulex *foliis obtuſis ſolitariis, ſpinis ſimplicibus. Flor. Leyd. African* Furze, or Whins, with ſimple blunt Leaves.

This Genus of Plants has been titled, by the antient Botaniſts, *Geniſta ſpinoſa*, and *Geniſta ſpartium*; but theſe being, compound Names, have been rejected; and as there is another Genus of Plants under the Title of *Geniſta*, Dr. *Linnæus* has applied this Title of *Ulex*, which is a Name uſed by *Pliny*, to this Genus.

There are two or three Varieties of the common Furze or Gorz, which are frequently met with in the Commons and Heaths, in moſt Parts of *England*; but as they are not ſpecifically different, they are not worthy to be enumerated here, eſpecially as they are Plants which are not much cultivated.

Theſe Plants propagate themſelves very plentifully by Seeds; ſo that when they are eſtabliſh'd in a Spot of Ground, they ſoon ſpread over the Place: for as the Seeds ripen, the Pods open with the Warmth of the Sun, and the Seeds are caſt out with an Elaſticity, to a great Diſtance all round, and theſe ſoon vegetate; whereby the Ground is fill'd with young Plants, which are not eaſily deſtroyed, when they are well rooted in the Ground.

Some Years ago the Seeds of this Plant were ſown to form Hedges about Fields; where, if the Soil was light, the Plants ſoon became ſtrong enough for a Fence againſt Cattle: but as theſe Hedges became naked at the Bottom, after a few Years, and ſome of the Plants frequently fail'd, ſo that there became Gaps in the Hedges; therefore the Culture of theſe Hedges has been, of late Years, little practis'd. But there are ſome Perſons who have ſown the Seeds of this Plant upon very poor hungry gravel or ſandy Land, which has produc'd more Profit than they could make of the Ground by any other Crop; eſpecially in ſuch Places where Fuel of all Sorts is dear: for this Furze is frequently uſed for heating Ovens, burning of Lime and Bricks, as alſo for the drying of Malt: and in ſome Places, where there has been a Scarcity of Fuel, I have known poor Lands, which would not have lett for five Shillings *per* Acre, which have been ſown with Furze, produce one Pound *per* Acre *per Ann.* ſo that there has been a conſiderable Improvement made by this Plant. But this is not worth practiſing in ſuch Countries where Fuel of any Kind is cheap, or upon ſuch Land as will produce good Graſs or Corn; therefore it is only mention'd here, to ſhew that poor Lands may be ſo manag'd, as to bring an annual Profit to their Proprietors.

The ſecond Sort is a Native of the Country near the *Cape of Good Hope*, where it uſually grows to the Height of five or ſix Feet; but in *Europe*, where it is preſerv'd as a Curioſity in ſome Gardens, it ſeldom is more than half that Height. It is too tender to live in the open Air, through the Winter, in *England*; therefore it is preſerv'd in Greenhouſes, with the hardier Sort of Exotic Plants, which do not require any artificial Heat to preſerve them.

It is propagated by Layers, which are generally two Years before they have ſufficient Root to tranſplant; ſo that theſe Plants being ſomewhat difficult to propagate in this Climate, this has render'd it leſs common in the *Engliſh* Gardens; becauſe it never produces any Seeds here, and but rarely any Flowers in *England*: but as it is an Ever-green, it is admitted into the Gardens of thoſe who are curious in Botany, for the ſake of Variety.

ULMARIA, Meadow-ſweet, or Queen of the Meadow.

The *Characters* are;

It hath a Flower compos'd of ſeveral Leaves, which are placed in a circular Order, and expand in form of a Roſe: out of whoſe Empalement riſes the Pointal, which afterward becomes a Fruit compoſed of many little membranaceous crooked Huſks, gather'd into an Head, each of which generally contains one Seed.

The *Species* are;

1. Ulmaria. *Cluſ. Hiſt.* Meadow-ſweet.

2. Ulmaria *flore pleno. Juſſieu.* Meadow-ſweet with a double Flower.

3. Ulmaria *foliis ex luteo variegatis.* Meadow-ſweet with Leaves variegated with yellow.

The firſt Sort grows wild in moiſt Meadows in moſt Parts of *England*: and flowers the Beginning of *June*, when it makes a fine Appearance amongſt the Graſs. It alſo grows plentifully on the Sides of Ditches and Rivers, where, as it is not often mowed down, it continues much longer in Beauty, and the Stalks riſe to a greater Height. The Flowers which are produced on the Tops of the Stalks, in form of an Umbel, are white, and ſmell very ſweet. Theſe, as alſo the Leaves and Roots, are uſed in Medicine. This Plant is eſteemed to be cooling, drying, and binding; and alſo is ſudorific and alexipharmic. The Preparations of this Plant are, the diſtilled Water of the Flowers and Leaves, and the Extract; which by ſome is much commended. The Flowers give an agreeable Flavour to Wine, and are ſometimes uſed to add a Flavour to ſtrong *Spaniſh* Wines, like that of the *Malvatic* Wine, which is made in the Iſland of *Candy*. Theſe Flowers are proper to place in Baſons to adorn Halls and Chambers; becauſe they are of an agreeable Sweetneſs, which doth not offend the Head.

This Plant is ſeldom admitted into Gardens, being ſo commonly found wild in the Fields; but in low moiſt Places, in large Gardens, if ſome of theſe Plants were placed, they would afford an agreeable Variety; and in ſuch Places few other Plants, which are more valuable, will thrive.

The ſecond Sort deſerves a Place in every good Garden, for the ſake of its fine double Flowers, which continue in Beauty a long time. This doth not differ from the common Sort in any thing, except that the Flowers are very double and large; ſo that when it is planted on a moiſt Soil, or is duly water'd in dry Weather, it makes a fine Appearance for at leaſt a Month, or, in a cool Seaſon, near ſix Weeks; and as the Flowers have an agreeable Sweetneſs, ſo they are a fine Ornament in Baſins to place in Rooms.

Theſe Plants are propagated by parting of their Roots, which ſhould be done in Autumn, that they may be well rooted before the dry Weather comes on in the Spring; otherwiſe they will not flower very ſtrong the following Summer. Theſe Roots need not be parted oftener than every other Year, and then they ſhould not be parted into ſmall Heads; for as the Beauty of this Plant is to have many Stems of Flowers, ſo, when the Roots are divided too much, there will be very few Stems produced; and, conſequently, the Plants will make but a mean Appearance.

Where theſe Plants are placed in in moiſt ſhady Borders, intermixed with other flowering Plants, they ſhould be allowed good room; for as their Roots ſpread pretty far in the Ground, ſo, when they have but little room, they will ſtarve in Summer, unleſs they are plentifully watered, and the Soil be very good in which they are planted; for wherever their Roots intermix with thoſe of other Plants, there will be a great Struggle for the Maſtery, and thereby both Sorts will be render'd weak. So that theſe ſhould be planted two Feet aſunder, and as much from any other Plants; and this will be room enough to dig the Ground between the Plants, which ſhould always be carefully done thoſe Years when the Plants are not remov'd; which will encourage the Roots, and cauſe them to flower very ſtrong.

The Sort with ſtrip'd Leaves is alſo preſerved in ſome Gardens for the ſake of Variety. This may be propagated by parting of the Roots in the ſame manner as the former Sort: but this muſt not have a rich Soil; for that will cauſe it to run plain.

ULMUS, The Elm-tree.

The *Characters* are;

The Flower conſiſts of one Leaf, which is ſhaped like a Bell, having many Stamina *(or Threads) in the Centre: from the Bottom ariſes the Pointal, which afterward becomes a membranaceous or leafy Fruit, almoſt heart-ſhaped; in the Middle of which is placed a pear-ſhaped Seed-veſſel, containing one Seed, for the moſt part of the ſame Shape, having a Border or Wing round it.*

The *Species* are;

1. Ulmus *vulgatiſſima, folio lato ſcabro. Ger. Emac.* The common rough-leav'd Elm.

2. Ulmus *folio latiſſimo ſcabro. Ger. Emac.* The Witch-hazel, or broad-leav'd Elm; by ſome unſkilful Perſons call'd the *Britiſh* Elm.

3. Ulmus *minor, folio anguſto ſcabro. Ger. Emac.* The ſmall-leav'd or *Engliſh* Elm.

4. Ulmus *folio glabro. Ger. Emac.* The ſmooth-leav'd or Witch-elm.

5. Ulmus *major Hollandica, anguſtis & magis acuminatis ſamarris, folio latiſſimo ſcabro. Pluk. Alm.* The *Dutch* Elm.

6. Ulmus *minor, folio anguſto ſcabro, elegantiſſime variegato.* The *Engliſh* Elm, with beautiful ſtriped Leaves.

7. Ulmus *folio glabro, eleganter variegato.* The Witch-elm, with ſtriped Leaves.

8. Ulmus *minor, foliis flaveſcentibus.* The yellow-leav'd Elm.

9. Ulmus *major Hollandica, anguſtis & magis acuminatis ſamarris, folio latiſſimo ſcabro, eleganter variegato.* The *Dutch* Elm, with ſtriped Leaves.

10. Ulmus *minor, folio anguſto glabro.* The ſmooth narrow-leav'd Elm, by ſome call'd the Upright narrow-leav'd Elm,

11. Ulmus *folio lato ſcabro, cortice cinereo glabro.* The White-bark'd Elm, by ſome call'd the ſmooth Witch-elm, and by others, the *Iriſh* Elm.

12. Ulmus *folio lato ſcabro, anguſtis ſamarris.* The *French* Elm.

The four firſt-mention'd Sorts are very common in divers Parts of *England*, though it is generally believ'd neither of them were originally Natives of this Country; but, however that be, they have propagated themſelves by Seeds and Suckers, which have riſen from the Roots of old Trees, in ſuch Plenty, as hardly to be rooted out, where they have had long Poſſeſſion, eſpecially in Hedge-rows, where there is Harbour for their Roots, which, when left undiſturb'd, will ſend forth a freſh Parcel of young Plants annually; from whence the People who ſupply the Nurſery-men gather them.

The fifth Sort is equally hardy, and almoſt as common in *England*, as either of the former. This is pretty quick of Growth while young, and will outſtrip the common *Engliſh* Elm for a few Years; but after ten or twelve Years Growth, the *Engliſh* Elm will get the better every Year; and the Timber thereof being much preferable to that of the *Dutch* Elm, renders it more valuable for Planting.

This Sort of Elm was introduc'd about the time of the Revolution, and was a faſhionable Tree at that time for Hedges; but as the Bark of the Shoots is very rough and unſightly,

ſightly,

whole Tree making a ragged Appearance, the Leaves coming out late in the Spring, and falling early in the Autumn, renders it not worthy of a Place: ſo ſhould be rooted out of every Garden.

The Sorts with ſtriped Leaves are preſerv'd by thoſe who are curious in collecting variegated Plants; but they are not worth propagating, unleſs for the ſake of Variety; being of ſlower Growth, and, in moſt Peoples Judgments, leſs beautiful, than the plain Sorts.

There are ſome other Varieties of the Elm, which differ ſo little from the Sorts here enumerated, as ſcarcely to be diſtinguiſh'd; ſo it will be needleſs to mention them, becauſe they are not ſo proper to make Plantations, as the other more common Sorts.

The tenth Sort is very common in ſome Parts of *Hertfordſhire*, and in *Cambridgeſhire*, where there is ſcarce any other Sort of Elm to be ſeen. This makes a very handſome upright Tree, and retains its Leaves as late in the Autumn as the common ſmall-leav'd Elm, which is call'd the *Engliſh* Elm by the Nurſery-men near *London*; but it doth not come out ſo early in the Spring.

The eleventh Sort is by ſome Perſons preferr'd to moſt others for the free Growth, and its retaining the Leaves longer than any other Sort. The Bark of this Tree is very ſmooth, and of an Aſh-colour; the Leaves are of a lively green Colour; and the Growth of the Tree is very regular and upright.

The twelfth Sort is not ſo much eſteem'd as either of the former; but, being a very hardy Kind, it will grow in ſuch Soils as the former will not: for which ſome Perſons cultivate it; tho' I think neither this, nor the *Dutch* Elm, worth planting.

These Trees may be either propagated by Layers or Suckers taken from the Roots of the old Trees; the latter of which is greatly practiſed in many Places: but as theſe are often cut up with indifferent Roots, they very often miſcarry, and render the Succeſs doubtful; whereas thoſe which are propagated by Layers, are in no Hazard, and always make better Roots, and come on faſter, than the other, nor do they ſend out Suckers from their Roots in ſuch Plenty; for which Reaſon this Method ſhould be more univerſally practis'd. And ſince a ſmall Compaſs of Ground fill'd with Stools of theſe Plants will be ſufficient to furniſh a Nurſery of a conſiderable Extent, annually, with Layers to be tranſplanted, it is richly worth every Perſon's while, who would cultivate theſe Trees, to allot a Piece of Ground for this Purpoſe.

The beſt Soil for ſuch a Nurſery is a freſh Hazel-loam, neither too light and dry, nor over-moiſt and heavy; this Ground ſhould be well trench'd, and a little rotten Dung buried therein; and in doing of this, great Care ſhould be taken to pick out all Roots of pernicious Weeds; which, if left in the Ground, would be very injurious to the Layers, and can't afterwards be ſo eaſily rooted out: then having laid the Ground level, the Plants muſt be planted at about eight Feet aſunder each Way. The beſt Seaſon for this Work is in Autumn, as ſoon as the Leaves begin to decay, that they may take Root before the dry Weather in the Spring comes on, whereby a great Expence of watering them will be ſaved: for if they are well ſettled in the Ground before the dry Weather, they will require little more than to mulch their Roots, to keep the Earth from drying.

Theſe Plants ſhould be permitted to grow rude two Years; during which time the Ground between ſhould be carefully clean'd and dug every Spring: by this time they will be ſtrongly rooted, and have made pretty ſtrong Shoots, ſo that they may be laid in the Ground. The manner of performing this being already deſcrib'd in the Article of *Layers*, I ſhall forbear repeating it in this Place.

When theſe Layers are well rooted, they ſhould be taken off, and tranſplanted out into a Nurſery: which ſhould be upon a good Soil, and well prepar'd (as before for the Stools). The Plants ſhould be planted in Rows four Feet aſunder, and two Feet Diſtance Plant from Plant in the Rows. This ſhould be done in Autumn, as ſoon as the Leaves begin to decay; and if there is ſome Mulch laid upon the Surface of the Ground about their Roots, it will preſerve them from being hurt by Froſt in Winter, and from drying Winds in Spring, and thereby ſecure them from all Hazard.

The following Summer the Ground between them ſhould be conſtantly kept clean from Weeds, and in Autumn they ſhould be pruned up, cutting off all ſtrong lateral Shoots, which, if left on, would impede their upright Growth; but there muſt be ſome of the ſmaller Shoots left on to detain the Sap, in order to augment the Stems of the Trees: for where they are pruned up too naked, they are apt to grow up too ſlender to ſupport themſelves; ſo that their Heads will recline to the Ground, and cauſe their Stems to grow crooked.

In this Nurſery they may remain five or ſix Years, obſerving conſtantly to dig the Ground between them every Spring, and to trim them as before directed; which will promote their Growth, and render them ſtrong enough to tranſplant out where they are to remain, in the time before-mention'd.

Theſe Trees are very proper to plant in Hedge-rows, upon the Borders of Fields, where they will thrive much better than when planted in a Wood, or cloſe Plantation; and their Shade will not be very injurious to whatever grows under them; but when theſe Trees are tranſplanted out upon Banks after this manner, the Banks ſhould be well wrought and clear'd from all other Roots, otherwiſe the Plants, being taken from a better Soil, will not make much Progreſs in theſe Places. About *Michaelmas* will be a good time for this Work, for the Reaſons before aſſign'd; but when they are planted, there ſhould be ſome Stakes fix'd in by them, to which they ſhould be faſten'd, to prevent their being diſplac'd by the Winds; and Part of their Heads ſhould be taken off before they are planted, which will alſo be of Uſe in preventing their being eaſily overturn'd by Winds; but by no means ſhould their leading Shoot be ſtopp'd, nor their Branches too cloſely cut off; for if there are not ſome Shoots left on to draw and attract the Sap, they will be in Danger of miſcarrying.

Theſe Trees are alſo proper to plant at a Diſtance from a Garden or Building, to break the Violence of Winds; for which Purpoſe there is not any Tree more uſeful; for they may be train'd up in form of an Hedge, keeping them cut every Year; which will cauſe them to grow very cloſe and handſome, to the Height of forty or fifty Feet, and be a great Protection againſt the Fury of Winds: but they ſhould not be planted too near a Garden, where Fruit-trees, or other Plants, are placed; becauſe the Roots of the Elms run ſuperficially near the Top of the Ground to a great Diſtance, and will intermix with the Roots of the other Trees, and deprive them of Nouriſhment. Nor ſhould they be planted near Gravel or Graſs-walks, which are deſign'd to be well kept; becauſe the Roots will run into them, and ſend forth Suckers in great Plenty; which will deface the Walks, and render them unſightly.

But for large Gardens, where Shade is requir'd, there is ſcarce any Tree ſo proper for that Purpoſe, being eaſy to remove when grown to a conſiderable Size; ſo that a Perſon who is willing to have his Plantations for Shade in a ſhort time, may procure Trees of one Foot Circumference in their Trunk, which will be in no Danger of ſucceeding, provided they are remov'd with Care. And theſe will take Root, and grow again, almoſt as well as young Plants, which is what few other Sorts of Trees will do; but then they ſhould be ſuch Trees as have been thus regularly train'd up in a Nurſery, and have good Roots, and not ſuch as are taken out of Hedge-rows (as is by ſome practis'd), which ſeldom riſe with any tolerable Roots, and conſequently often miſcarry; and this has been the Occaſion of ſo many Plantations of theſe Trees failing; for although ſome of them may live a few Years, yet few of them are of long Duration, and they rarely increaſe much in their Stems, but frequently grow hollow, their Heart decaying firſt; ſo that they are ſupported only by their Bark or Shell, for a few Years, and the firſt ſevere Winter, or very dry Summer, they are generally deſtroyed.

But although I have ſaid, that Elms which are train'd up in a Nurſery may be remov'd with Safety, at a larger Size than moſt other Trees, yet I would not have it underſtood, that by this I would recommend the planting of them when large; for if People would have a little Patience when they plant, and never plant any of theſe Trees which are more than four or five Inches in Girt of their Stems, they will in a few Years become better Trees than any of thoſe which are tranſplanted of a much larger Growth, and they will always grow to a much larger Size: beſides, they are much more eaſily remov'd, and do not require to be ſo ſtrongly ſupported; nor is there much Danger of the young Trees miſcarrying: therefore it is much more eligible to make choice of young thriving Trees (but not out of a better Soil than that where they are to be planted), and never to plant any large Trees, unleſs where a ſmall Number may be wanted for an immediate Shade; and in ſuch Caſes, it is always proper to plant ſome young Trees amongſt the large ones, to ſucceed them when they fail.

In Planting of theſe Trees, great Care ſhould be taken not to bury their Roots too deep; which is very injurious to them, eſpecially if they are planted on a moiſt Loam or Clay; in which Caſe, if the Clay is near the Surface, it will be the beſt way to raiſe the Ground in an Hill, where each Tree is to be planted; which will advance their Roots above the Surface of the Ground, ſo that they will not be in Danger of rotting in Winter with Moiſture.

When theſe Trees are propagated by Suckers taken from the Foot of old Trees, they are commonly laid into the Ground very cloſe in Beds, where, in dry Weather, they may be frequently water'd, to encourage their putting out Roots. In theſe Beds they are left two Years; by which time, thoſe that live will be well rooted (tho' a great many of them generally die); then they ſhould be tranſplanted into the Nurſery, and manag'd as hath been directed for the Layers.

There are ſome who raiſe the Witch elm from Seeds, which it generally produces in great Plenty, and are ripe in *April*. Theſe ſhould be ſown upon a Bed of freſh loamy Earth, and gently cover'd: in dry Weather they ſhould be water'd, and if the Bed is ſhaded from the violent Heat of the Sun, it will be of great Service to the Seeds (for I always obſerve the Plants to come up better in the Shade, than when expos'd to the Sun). When the Plants come up, they ſhould be carefully clear'd from Weeds; and after they have ſtood two Years in the Seed-bed, they will be fit to plant out into the Nurſery, where they muſt be manag'd as the former.

Sometimes the common *Engliſh* Elm will produce Seeds; but it is not ſo conſtantly fruitful as the Witch-elm, which ſeldom fails to produce great Quantities, when they have arrived to a due Maturity; which Seeds will fall to the Ground, and when they light upon a Spot which is not diſturb'd, the Plants will come up in great Plenty.

The Timber of the common *Engliſh* Elm is generally preferr'd to the reſt; tho' that of the Witch-elm is often as good, and is the largeſt Tree, when planted on a kindly Soil; but the *Dutch* Elm affords the worſt Timber, and never will grow to the Stature of either of the other Sorts; ſo that this ſhould not be cultivated for the Timber: therefore the beſt way to be ſure of the Kinds which a Perſon would chooſe to propagate, is to have a Nurſery of Stools, in order to furniſh Layers; for when they are grubb'd up from Hedge-rows, there will often be many Sorts intermix'd, eſpecially if the People who go about to gather them, furniſh them; becauſe they take them indifferently, where-ever they can procure them; ſo that when they are planted out thus blended together, there will be a conſiderable Difference in their Growths, which will deface the Plantation.

URENA, *Indian* Mallow.

The *Characters* are;

It hath a malvaceous Flower, with a double Empalement; the outer being of one Leaf, ſlightly cut at the Brim into five Parts; but the inner is five-leaved, being cut to the Bottom: the Flower is compoſed of five Leaves, which are oblong and blunt at their Extremity, but are narrow at their Baſe: in the Centre there are many Stamina, *which are joined, and form a Column at their Baſe, but ſpread open above: the Pointal afterward changes to a pentagonal Fruit, which is burry, and divides into five Cells, each having one angular Seed.*

The *Species* are;

1. Urena *foliis angulatis. Lin. Hort. Cliff. Indian* Mallow, with angular Leaves.

2. Urena *foliis lobatis, petiolis longiſſimis aſperis. Indian* Mallow, with Leaves deeply divided into ſeveral Lobes, and very long rough Footſtalks.

3. Urena *foliis bryoniæ albæ diviſuris. Indian* Mallow, with Leaves divided like thoſe of the White Bryony.

This Name of Urena was applied to this Genus by Dr. *Dillenius*, in the *Hortus Elthamenſis*, as the Characters of the Plants differ from all the *Genera* of the malvaceous Tribe; and this being a Name applied to it in the *Hortus Malabaricus*.

Theſe three Species are Natives of the *Eaſt-Indies*, from whence I received their Seeds, by the Title of *Indian Mallow*; which, for want of a better *Engliſh* Name, I have continued to them.

Theſe Plants grow about two Feet high, and toward their Top they put out ſome Side-branches; theſe are garniſh'd with Leaves placed alternately at a conſiderable Diſtance. Thoſe of the firſt Species are cut into ſeveral obtuſe Angles; but thoſe of the two latter are divided deeply into ſeveral obtuſe Portions. The Flowers are produc'd from the Wings of the Leaves, which are ſmall, ſo make no great Appearance; therefore theſe Plants are only kept in the Gardens of thoſe who are curious in Botany.

They are propagated by Seed, which ſhould be ſown on an Hot-bed early in the Spring; and when the Plants are fit to remove, they ſhould be tranſplanted into Pots, and plunged into a freſh Hot-bed to bring them forward: and afterward they muſt be treated in the ſame manner as hath been directed for the tender Sorts of *Ketmia*, to which the Reader is deſired to turn, to avoid Repetition. If the Plants are brought forward in the Spring, and afterward placed in the Stove, or under a deep Frame, they will ripen Seeds the firſt Seaſon; but if they ſhould not, the Plants may be preſerv'd through the Winter in the Stove, and will ripen their Seeds the following Seaſon; after which the Plants ſeldom remain.

URTICA, The Nettle.

The *Characters* are;

It hath an apetalous Flower, conſiſting of many Stamina, *included in an Empalement; but thoſe are barren; for the Embryoes are produced either on different Plants, or on different Parts of the ſame Plant, without any viſible Flower, which afterward becomes a bivalve Seed-veſſel, ſometimes gather'd into round Heads, and at other times are ſmall and hairy, incloſing ſeveral Seeds.*

The *Species* are;

1. URTICA *urens maxima. C.B.P.* The greateſt Stinging-nettle.

2. URTICA *urens minor. C.B.P.* The leſſer Stinging-nettle.

3. URTICA *urens pilulas ferens, 1. Dioſcoridis, ſemine lini. C. B. P.* Pill bearing Stinging-nettle, with a Seed like Flax.

4. URTICA *altera pilulifera, parietariæ foliis. H. R. Par.* Another Pill-bearing Stinging nettle, with Leaves like Pellitory, commonly call'd *Spaniſh* Marjoram.

5. URTICA *pilulifera, folio anguſtiori, caule viridi, Balearica. Salvad.* Narrow-leav'd pill bearing Stinging-nettle from *Majorca*, with a green Stalk.

6. URTICA *maxima racemoſa Canadenſis. H. R. Par.* The greateſt branching Nettle of *Canady*.

7. URTICA *Canadenſis, myrrhidis folio. Inſt. R. H.* *Canady* Nettle, with a Leaf of ſweet Cicely.

8. URTICA *racemoſa Americana, amplo coryli folio. Plum. Cat.* Branching *American* Nettle, with a large Hazel-leaf.

9. URTICA *racemifera maxima Sinarum, foliis ſubtus argenteis, lanugine villoſis. Pluk Amalth.* Greateſt branching Nettle of *China*, with Leaves which are white, and woolly underneath.

10. URTICA *foliis profunde laciniatis, ſemine lini. Amman. Ruth.*

Siberian Nettle, with deeply-cut Leaves, and a Flax-ſeed.

The firſt of theſe Sorts is a very common Weed upon the Sides of Banks, Ditches, and other uncultivated Places, where its Roots will ſpread, and over-run the Ground; ſo that it ſhould always be carefully extirpated from Gardens. It is ſometimes uſed in Medicine; but may be eaſily procured from the Fields at almoſt any Seaſon.

The ſecond Sort is alſo a very common Weed in Gardens, and cultivated Fields; but, being an annual Plant, it is not ſo difficult to eradicate as the former.

The third, fourth, and fifth Sorts are preſerved in many Gardens for Variety; but the fourth, which is commonly called *Spaniſh* Marjoram, is moſt common in the *Engliſh* Gardens, where it is cultivated for makeing Sport: many ignorant Perſons, taking it for a Sort of Marjoram, are often ſeverely ſtung by ſmelling to it; and others put it into the Middle of Noſegays, amongſt other Greens, which they preſent to Perſons who are not acquainted with the Plant; and by ſmelling to it they ſuffer in like manner as the former.

The third Sort is mention'd to grow wild in *England*; but the other two are brought from warmer Countries.

All theſe Plants may be eaſily propagated by ſowing their Seeds in *March*, upon a Bed of light rich Earth; and when the Plants are come up, they ſhould be tranſplanted out into Beds, or the Borders of the Pleaſure-garden, interſperſing them amongſt other Plants, that they may not be eaſily diſcover'd by Perſons whom there is a Deſign to deceive, by gathering a Sprig from them to ſmell to. After theſe Plants have taken Root, they will require no farther Care, but only to keep them clear from Weeds: in *June* they will flower, and their Seeds will ripen in Autumn; which, if permitted to ſhed upon the Ground, will come up the following Spring, and flouriſh without any farther Care.

The Seeds of the third Sort are ſometimes uſed in Medicine.

The ſixth Sort is very common in many *Engliſh* Gardens; where it is preſerv'd more for the ſake of Variety, than for any Beauty. This hath an abiding Root, which ſends forth a great Number of Shoots every Spring, which riſe about three Feet high, and form a thick Tuft or Buſh, which continues green til the Autumn, when the Shoots decay to the Root. This may be propagated by parting of the Root in the Spring, and may be planted in almoſt any Soil or Situation, and will endure the ſevereſt Cold of this Climate in the open Air.

The ſeventh Sort is alſo *preſerv'd* in ſome curious Gardens, for the ſake of Variety. The Leaves of this Plant are finely cut and jagged into many Parts, in ſome manner reſembling thoſe of ſweet *Cicely*. This is alſo a very hardy Plant, and may be treated as the former.

The eighth Sort was diſcover'd by Father *Plumier* in *America*. This is more impatient of Cold than the other; ſo ſhould be planted in Pots, and placed in Shelter in the Winter-ſeaſon, otherwiſe it will not live in this Country. But as it is a Plant of little Beauty, it is only preſerved by ſome curious Perſons for Variety.

The ninth Sort retains its Leaves all the Winter; which, being very large, and hoary underneath, make an agreeable Variety in the Green-houſe in the Winter-ſeaſon. *The*

Stems of this Plant riſe four Feet high, or more; and theſe often branch out, at the Top, into Side-ſhoots; and the Flowers (which are like thoſe of the common Nettle) are produced from the Wings of the Leaves. This Sort is too tender to live in the open Air in Winter; wherefore the Plants ſhould be potted, and in Autumn removed into the Green-houſe; where, if they are ſecured from the Froſt, and frequently refreſhed with Water, they will thrive extremely well. In Summer they may be placed abroad in a ſhelter'd Situation, and in dry Weather they muſt be plentifully water'd; for they are very thirſty Plants. This may alſo be propagated by parting of the Roots, which ſhould be done in *May*, when they are removed out of the Green-houſe; for at that Seaſon this Plant is in its leaſt Vigour, the Winter being the Time when it is moſt flouriſhing. The Seeds of this Plant were brought from *China*, where the Plant is call'd *Peema*.

The tenth Sort came from *Siberia*, and, being an Exotic, is preſerv'd in ſome Botanic Gardens, for the ſake of Variety; but it muſt be confined, otherwiſe it will become a very bad Weed in Gardens.

This will grow to the Height of five or ſix Feet in good Ground; the Leaves are plac'd by Pairs, and are deeply cut; but the whole Plant ſtings like the common Nettle, and the Roots abide, though the Plants decay annually to the Surface of the Ground.

UVA URSI, The *Spaniſh* Redwhort.

The *Characters* are;

It hath a globular bell-ſhaped Flower, conſiſting of one Leaf, from whoſe Empalement ariſes the Pointal, fixed like a Nail in the hinder Part of the Flower; which afterward becomes a ſoft Berry or Fruit, of a ſpherical Form, incloſing hard Seeds, which are ſome plain, and others gibbous.

There is but one *Species* of this Plant at preſent known; *viz.*

Uva Ursi. *Cluſ. Hiſt.* *Spaniſh* Redwhort.

This Plant is very near akin to our common Whorts or Bilberries: it riſes about a Foot high, and hath ſeveral flexible Branches, which are cover'd with a rediſh Bark, ſomewhat like the young Branches of the Strawberry-tree: theſe are thinly beſet with oblong ſtiff green Leaves, which are ſerrated on their Edges. The Flowers grow on the Top of the Branches, which are of a whitiſh-blue Colour: theſe are ſucceeded by red Berries, ſomewhat larger than thoſe of our common Whorts, which have an acid Taſte.

This Plant muſt be treated in the ſame manner as our *Vitis Idæa*, or Bilberry; which is, to procure the Plants, with Balls of Earth to their Roots, from the Place of its native Growth; becauſe the Seeds ſeldom grow, and, when they ſucceed, it will be a long time before the Plants will grow to any Size: but as there are Directions for the Management of theſe Plants exhibited under the Article of *Vaccinium*, I ſhall not repeat them in this Place.

VULNERARIA, Woundwort.

The *Characters* are;

It hath a papilionaceous or (peabloom) Flower, out of whoſe tubular and turgid Empalent ariſes the Pointal, which afterward becomes a ſhort Pod filled with roundiſh Seeds: to theſe Notes may be added, That the Pod is incloſed in a membranous Bladder, which was before the Empalement.

The *Species* are;

1. Vulneraria *ruſtica*. *J. B.* Ruſtic Woundwort, Kidney Vetch, or Lady's Finger,

2. VULNERARIA *ruſtica, flore albo. Inſt. R. H.* Ruſtic Woundwort, with a white Flower.

3. VULNERARIA *flore purpuraſcente. Inſt. R. H.* Ruſtic Woundwort, with a purpliſh Flower.

4. VULNERARIA *pentaphyllos. Inſt. R. H.* Five-leav'd Woundwort.

5. VULNERARIA *Cretica, flore parvo vario. Tourn. Cor.* Candy Woundwort, with a ſmall variable Flower.

The firſt Sort grows wild on poor chalky Ground in divers Parts of *England*; but is rarely cultivated in Gardens. This ſends forth ſeveral Stalks from the Root, which are about eight or nine Inches long, alternately beſet with hairy Leaves, which are compoſed of four or five Pair of Lobes, terminated with an odd one. On the Top of the Stalks the Flowers are produced, which are ſmall, and of a yellow Colour, collected together in a broad Head, which are ſucceeded by ſhort Pods fill'd with roundiſh Seeds. This Plant flowers toward the End of *May*, and the Seeds are ripe in *July*.

The ſecond Sort is a Variety of the firſt, from which it only differs in the Colour of its Flowers, which are white.

The third Sort is found wild in ſome Parts of *Wales*, from whence the Seeds and Plants have been procured by ſome curious Botaniſts, who preſerve them in their Gardens. This Sort produces pretty purpliſh Flowers, collected into Heads, which make an agreeable Appearance.

The fourth Sort is found wild in *Italy*, *Sicily*, and ſome other warm Countries; but in *England* it is preſerv'd in ſome curious Gardens for the ſake of Variety. This is an annual Plant, which periſhes with the firſt Approach of Winter. The Seeds of this Plant ſhould be ſown about the Middle of *March*, on a Bed of light Earth, in an open Situation, where they are deſign'd to remain; becauſe the Plants do not very well bear tranſplanting. Therefore the beſt Method is, to ſow the Seeds in ſmall Drills, made two Feet aſunder; and when the Plants are come up, they ſhould be thinned where they are too cloſe; ſo as to leave them ſix or eight Inches aſunder in the Rows; and then keep the Ground clear from Weeds, which is all the Culture they require. The Branches of this Plant ſpread flat on the Ground, and the Flowers are produced in large Bladders from the Wings of the Leaves. Theſe appear in *June*, and the Seeds will ripen the End of *Auguſt*.

If ſome of theſe Seeds are ſown the Beginning of *September*, on a warm dry Border, the Plants will come up in Autumn, and live thro' the Winter (provided it is not very ſevere), and will flower early the following Summer, whereby good Seeds may be obtain'd; for when the Summers prove cold and wet, thoſe Plants which come up from Seeds ſown in the Spring, do not produce ripe Seeds; ſo that the Species may be loſt, where there are not Autumnal Plants.

The fifth Sort was diſcover'd by Dr. *Tournefort* in the Iſland of *Candy*, from whence he ſent the Seeds to the Royal Garden at *Paris*. This is alſo an annual Plant; therefore ſhould be manag'd in the ſame manner as hath been directed for the former Sort.

The firſt, ſecond, and third Sorts will abide two, and ſometimes three Years, before their Roots decay; though they generally are in the greateſt Vigour the ſecond Year; for theſe rarely flower the ſame

Year they are ſown. The ſureſt Method to have theſe Plants ſucceed in a Garden is, to ſow their Seeds in the Autumn, as ſoon as they are ripe, on a Bed or Border of poor, dry, gravelly, or chalky Soil, on which they will thrive much better than on a rich garden Earth. When the Plants are come up, they ſhould be thinned, leaving them ſix or eight Inches aſunder; and afterward, if they are kept clear from Weeds, they will require no farther Care.

The firſt Sort was formerly much uſed by the *Germans*, as a Wound-herb, from whence it obtained its Name; but at preſent it is not in any Uſe.

UVULARIA.

The *Characters* are;

It is of the liliaceous Tribe: the Flower has no Empalement, and is compoſed of ſix Leaves, which are long and narrow: in the Centre of the Flower the Pointal ariſes, being ſurrounded by ſix Stamina, *each ſupporting an oblong Summit; the Pointal afterward becomes an oblong three-corner'd Seed-veſſel, having three Cells, which are filled with round compreſſed Seeds.*

The *Species* are;

1. Uvularia *folio integerrimo. Flor. Leyd.* Uvularia with an intire Leaf.

2. Uvularia *foliis cordatis oblongis. Flor. Leyd.* Uvularia with oblong heart-ſhap'd Leaves.

The firſt Sort is a Native of *Canada* and *Virginia*, and has been long cultivated in ſeveral curious Gardens in *Europe*. It was firſt ranged in the Genus of *Polygonatum*; and, by Dr. *Boerhaave*, it was placed with the *Fritillaria*; but this Title of *Uvularia* was given to it by Dr. *Linnæus*, from the Reſemblance which the Fruit of it has to the *Uvula*.

The ſecond Sort is a Native of *Germany*, from whence it has been brought to ſeveral curious Gardens.

They are both very hardy Plants, ſo will live in the full Ground. They produce their Flowers in *March* and *April*, at the ſame Seaſon with the Fritillarias; but as the Flowers have not much Beauty, the Plants are only cultivated for the ſake of Variety. They are only propagated by parting of their Roots; for they do not produce Seeds in *England*. The beſt Seaſon for removing them is about *Michaelmas*, when their Roots may be ſeparated, and planted in the Borders of the Flower-garden; but this ſhould be done every third Year; for if they are often removed, the Plants will not thrive ſo well, or flower ſo ſtrong, as when they ſtand two or three Years unremov'd. They delight in a Soil not too wet or ſtiff, but a gentle Hazel-loam.

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W A

WALKS are made either of Gravel, Sand, or Graſs; theſe three Sorts of Walks are the moſt common in *England*; but where Gravel or Sand cannot be procur'd, they are ſometimes laid with powdered Coal, Sea-coal Aſhes, and ſometimes of powdered Brick; but theſe are rarely uſed, when either Gravel or Sand can be procur'd: however, where Sea-coal Aſhes can be had, it is preferable to the powder'd Coal or Bricks; becauſe the Aſhes bind very hard, and never ſtick to the Feet in froſty Weather, which is a very good Quality; but the Darkneſs of its Colour has been an Objection to the Uſe of it in Gardens;

dens: however, for Wilderneſs-walks I think it is preferable to moſt other Materials. But I ſhall proceed to give Directions for the making of the ſeveral Sorts of Walks, and firſt of the Gravel-walks.

In order to the laying of Walks in Gardens, it will be very proper, that the Bottom of them be fill'd with ſome Lime-rubbiſh, or coarſe Gravel, Flint-ſtones, or other rocky Materials; which will be ſerviceable in preventing Weeds from growing through the Superficies of the Gravel. This Bottom ſhould be laid eight or ten Inches thick, over which the Coat of Gravel ſhould be ſix or eight; which Gravel ſhould be fine, but yet not ſcreened, becauſe that ſpoils it. This ſhould be laid on an Heap, rounding, that the larger rough Stones may run down on the Sides; which being every now-and-then raked off, the Gravel by that means will be ſufficiently fine.

After the Gravel has been laid to the Thickneſs above-mentioned, then the Walks muſt be raked true, and level from all great Drips, as well as little Holes. By this means moſt of the Stones of the Walks will be raked under your Feet; which ſhould rather be gently ſprinkled back again, over the laſt Length that is raked, than buried (as is the Practice of many Gardeners); for by this means the Walk will lie much harder, and the coarſeſt Stones will very much contribute to its Firmneſs, provided they are not too large, or angular, becauſe the latter are often diſplaced by walking.

There is alſo a great Fault committed frequently, in laying Walks too round; and ſome to that Degree, that they cannot be walked on with that Eaſe and Pleaſure that ought to be; and beſides, this too great Rounding takes off much from the ſeeming Breadth of the Walk.

The common Allowance for a Gravel-walk of five Feet Breadth, is an Inch in the Crown; ſo that if a Walk be twenty Feet wide, accord-to this Proportion, it will be four Inches higher in the Middle than on each Side; one of thirty Feet, ſix Inches; and ſo on.

When a Walk has been thus carefully laid, or rather, after every Length, or Part of it (which commonly is about fifteen Feet each), then it ſhould be roll'd well, both in Length, and alſo croſs-ways. The Perſon who rolls it, ſhould wear Shoes with flat Heels, that he may not make Holes in the Walks; for when they are once made in a new Walk, it will not be eaſy to roll them out again.

In order to lay Gravel-walks firm, it will be neceſſary to give them three or four Water-rollings; that is, they muſt be roll'd when it rains ſo very faſt, that the Walks ſwim with Water: this will cauſe the Gravel to bind, ſo that when the Walks come to be dry, they will be as hard as Terrace.

Iron-mould Gravel is accounted the beſt for binding; or Gravel with a little binding Loam amongſt it; which latter, though it be apt to ſtick to the Heels of Shoes in hot wet Weather, yet nothing binds better in dry Weather.

When the Gravel is over-ſandy or ſharp, Loam is frequently mix'd with it; which, if they be caſt together in Heaps, and well mix'd, will bind like a Rock; whereas looſe Gravel is as uncomfortable and uneaſy to walk on, as any other Fault in a Walk can render it.

The beſt Gravel for Walks is ſuch as abounds with ſmooth Pebbles (as is that dug at *Black-heath*), which, being mix'd with a due Proportion of Loam, will bind like a Rock, and is never injur'd by wet or dry Weather; and the Pebbles, being ſmooth, are not ſo liable to be turn'd up, and looſen'd by the Feet in walking, as are thoſe which are angular and rough; for where Walks are laid with ſuch Gravel as is full of irregular Stones, they appear unſightly in a Day's time after rolling; becauſe the Stones will riſe upon the Surface whenever they are walk'd upon; but the ſmooth Pebbles will remain handſome two or three Days without rolling.

The Width of theſe Walks muſt always be proportion'd to their Length, and the Size of the Garden; but ſmall Walks are every-where diſagreeable; ſo that if the Walks were to be only two hundred Feet long, I ſhould adviſe them to be made fourteen or fifteen Feet wide: for it is much better to have but few Walks in a Garden, and thoſe to be ſpacious, than to make many ſmall Walks, as is often practiſed.

Gravel-walks are very neceſſary near the Houſe; becauſe, being ſoon dry after Rain, they are proper for walking on, in all Seaſons. But then theſe ſhould be but few, and thoſe ought to be large and magnificent, proportionable to the Grandeur of the Houſe and Garden. The principal of theſe Walks ſhould be elevated parallel with the Houſe, ſo as to form a Terrace: this ſhould extend itſelf each way, in proportion to the Width of the Garden; ſo that from this there may be a Communication with the Sand-walks, without going on the Graſs; or there ſhould be Side-walks of Gravel to lead to them, that there may be a dry Walk continued quite through the Gardens. But there is not a more ridiculous Sight, than that of a ſtrait Gravel-walk, leading to the Front of the Houſe, interſecting the Graſs, ſo as to make it appear like the ſtiff formal Graſs plots frequently made in little Court-yards by Perſons of low Taſte.

Graſs-walks in a Garden are both ornamental and delightful in Summer-time, and dry Weather.

Theſe may be made either by laying them with Turf, or ſowing them with Hay-ſeed, and raking them fine and level; which, keeping them well roll'd, and frequently mow'd, will make the Graſs fine: but thoſe which are laid with Turf, are preferable to the ſown Walks.

Theſe may be laid a little rounding, to caſt off the Water the better; but the Slope muſt not be ſo great as to be diſcover'd with the Eye. About a fourth Part of the Roundneſs allow'd for Gravel-walks will be ſufficient for theſe, if in wet Ground; but if the Ground be dry, it is the beſt way to lay them quite level.

Sometimes there are Water-tables on each Side of theſe Walks, which is very good for draining them, and alſo for keeping the Graſs and Weeds from mixing with the Borders; and, beſides, theſe Water-tables render the Walks the handſomer, and appear the more beautiful.

Theſe Water-tables ought to be new-cut once or twice a Year; and this ought to be done by a ſtrait Line, as exactly as poſſible.

The oftener theſe Walks are mowed and rolled in Summer, the thicker their Bottoms will be; and in Autumn the Graſs ſhould be kept very ſhort, and well roll'd; for, if it be permitted to grow pretty long at this Seaſon, the Blade will decay in Winter, and greatly injure their Roots. The Worm-caſts muſt alſo be carefully beat to-pieces with a long Aſh-pole, and ſpread over the Graſs: this the Gardeners call *Polling of a Walk*, which is done by bruſhing the Surface of the Ground ſtrongly with a ſlender Pole: the oftener this is repeated, the better it is for the Graſs; beſides, it will deſtroy the Worm-caſts, and render the Walks more beautiful.

Having given Directions for the making of Gravel and Graſs-walks, I ſhall come next to treat of Sand-walks, which are now very frequently made in Gardens; as being leſs expenſive in the making, and alſo in keeping, than either of the former: and in very large irregular Gardens, which are ſuch as moſt Perſons eſteem, this is a very great Article: for as the greateſt Part of the Walks which are made in Gardens twiſt about in an irregular manner, it would be very difficult to keep them handſome, if they were laid with Gravel. And as theſe Walks are for the moſt part ſhaded by Trees, ſo the dripping of the Water from their Branches, in hard Rains, would waſh the Gravel in Holes, and render the Walks very unſightly. When theſe Wood-walks are Graſs, they do not appear ſightly, nor are they very proper for walking on: for after Rain they continue damp ſo long, that they become unhealthy to walk on; and the Graſs generally grows ſpiry and weak for want of Air; and by the continual dropping of the Trees, will by degrees be deſtroyed. Therefore it is much better to lay theſe Walks with Sand, which will be dry and wholſome; and whenever they appear moſſy, or any Weeds begin to grow on them, if they are ſhoved with a *Dutch* Hoe in dry Weather, and then raked over, it will deſtroy the Weeds and Moſs, and make the Walks appear as freſh and handſome as if they had been new-laid.

In the modern Way of laying out Gardens, the Walks are carried through Woods and Plantations; ſo that theſe are ſhady and convenient for walking in the Middle of the Day. Theſe are uſually carried about, winding as much as the Ground will admit of, ſo as to leave a ſufficient Thickneſs of Wood, to make the Walks private; and that the Perſons who are walking in one Part of them, may not be ſeen by thoſe who are in any of the other Parts. Where theſe Walks are contrived with Judgment, a ſmall Extent of Ground will admit of a great many Turns; ſo that a Perſon may walk ſome Miles in a ſmall Garden. But theſe Turns ſhould be made as natural as poſſible, ſo as not to appear too much like a Work of Art, which will never pleaſe ſo long as the former.

The Breadth of theſe Walks muſt be proportion'd to the Size of the Ground, which in a large Extent may be twelve or fourteen Feet wide; but in ſmall Gardens five or ſix Feet will be ſufficient. There are ſome Perſons who allow a much greater Breadth to their Walks, than what I have aſſign'd to the largeſt Gardens; but as theſe Walks are ſuppos'd to be ſhaded by Trees, ſo, when they are made too broad, the Trees muſt be planted cloſe to the Sides of the Walks; and then it will be a long time before they will afford a ſufficient Shade, if the Trees are young. Therefore I imagine, the Width here allowed will by moſt People be thought ſufficient, eſpecially as the Walks are deſign'd to wind as much as the Ground will allow; becauſe the wider they are, the greater muſt be the Turns; otherwiſe the Walks will not be private for any ſmall Diſtance. Beſides, as it will be proper to line the Sides of theſe Walks with Honeyſuckles, Sweetbrier, Roſes, and many other ſweet-flowering Shrubs; ſo the tall Trees ſhould be placed five or ſix Feet from the Walk, to allow room for theſe. But as I ſhall particularly treat of the Method of laying out Wilderneſſes, and planting of them, in ſuch a manner, as to render them as nearly reſembling a natural Wood as poſſible, under its proper Head; I ſhall add nothing more in this Place, except a few common Directions for making of theſe Sand-walks.

When the Ground is traced out in the manner as the Walks are deſign'd, the Earth ſhould be taken out of the Walks, and laid in the Quarters. The Depth of this muſt be proportion'd to the Nature of the Soil; for where the Ground is dry, the Walks need not be elevated much above the Quarters; ſo the Earth ſhould be taken out four or five Inches deep in ſuch Places; but where the Ground is wet, the Bottom of the Walks need not be more than two Inches below the Surface, that the Walks may be raiſed ſo high, as to throw off the Wet into the Quarters; which will render them more dry and healthy to walk on.

After the Earth is taken out to the intended Depth, the Bottom of the Walks ſhould be laid with Rubbiſh, coarſe Gravel, or whatever of the like Nature can be moſt readily procured. This ſhould be laid four or five Inches thick, and beaten down as cloſe as poſſible, to prevent the Worms from working thro' it; then the Sand ſhould be laid on about three Inches thick; and after treading it down as cloſe as poſſible, it ſhould be raked over, to level and ſmooth the Surface. In doing of this, the Whole ſhould be laid a little rounding to throw off the Wet: but there will be no Neceſſity of obſerving any Exactneſs therein; for as the whole Ground is to have as little Appearance of Art as poſſible, the rounding of theſe Walks ſhould be as natural; and only ſo contriv'd, as that the Water may have free Paſſage off them.

The Sand with which theſe Walks are laid, ſhould be ſuch as will bind; otherwiſe it will be very troubleſome to walk on them in dry Weather: for if the Sand be of a looſe Nature, it will be mov'd with ſtrong Gales of Wind, and in dry Weather will ſlide from under the Feet. If, after theſe Walks are laid, they are well rolled two or three times, it will ſettle them, and cauſe them to be firm. If the Sand is too much inclinable to Loam, it will alſo be attended with as ill Conſequence, as that which is too looſe; for this will ſtick to the Feet after every Rain; ſo that where Sand can be obtain'd of a middle Nature, it ſhould always be preferr'd.

In ſome Countries where Sand cannot be eaſily procur'd, theſe Walks may be laid with Sea-ſhells well pounded, ſo as to reduce them to a Powder, which will bind extremely well, provided they are rolled now-and-then: but where neither of theſe can be eaſily procured, Sea-coal Aſhes, or whatever elſe can be gotten, which will bind, and be dry to the Feet, may be uſed for this Purpoſe: and where any of theſe can only be had in ſmall Quantities, the Walks ſhould have a greater Share of Rubbiſh laid in their Bottom, and theſe ſpread thinly over them; and in moſt Places Rubbiſh, rough Stones, or coarſe Gravel, may be eaſily procured.

WALLS are abſolutely neceſſary

in Gardens, for the ripening of all ſuch Fruits as are too delicate to be perfected in this Country, without ſuch Aſſiſtance. Theſe are built with different Materials; in ſome Countries they are built of Stone, in others with Brick, according as the Materials can be procured beſt and cheapeſt.

Of all Materials proper for building Walls for Fruit-trees, Brick is the beſt; in that it is not only the handſomeſt, but the warmeſt and kindeſt for the ripening of Fruit; beſides that, it affords the beſt Conveniency of Nailing; for ſmaller Nails will ſerve in them than in Stone-walls, where the Joints are larger; and Brick-walls, with Copeing of Free-ſtone, and Stone Pilaſters or Columns, at proper Diſtances, to ſeparate the Trees, and break off the Force of the Winds, make not only the moſt beautiful, but the moſt durable Walls of any others.

In ſome Parts of *England* there are Walls built both of Brick and Stone, which have been very commodious. The Bricks of ſome Places are not of themſelves ſubſtantial enough for Walls, nor are they any-where ſo durable as Stone; and therefore ſome Perſons, that they might have Walls both ſubſtantial and wholſome, have built double ones, the Outſide being of Stone, and the Inſide of Brick, or a Stone-wall lined with Brick: but when theſe are built, there muſt be great Care taken to bond the Bricks well into the Stone, otherwiſe they are very apt to ſeparate one from the other; eſpecially when Froſt comes after much Wet; which ſwells the Morter, and frequently throws down the Bricks, when the Walls are only faced with them, and not well tied into the Stone.

Where the Walls are built intirely of Stone, there ſhould be Trelaſes fix'd up againſt them, for the more convenient faſtening of the Branches of the Trees: the Timbers of theſe Eſpaliers need not be more than an Inch and an half thick, and about two Inches and an half broad: theſe ſhould be fix'd croſs each other, at about four Inches Diſtance; for if they are at a much greater Diſtance, it will be difficult to faſten the Shoots of the Trees properly: as this Trelaſe will be laid cloſe to the Wall, the Branches of the Trees will be laid about two Inches from the Wall; in which Poſition the Fruit will ripen better than when it lies quite cloſe to the Wall; ſo that where Stone-walls are built, there ſhould always be theſe Eſpaliers framed againſt them; which will render theſe Walls very good for Fruit trees; which, without the Eſpaliers, ſeldom are found to anſwer the Purpoſe of ripening the Fruits well; beſides the Inconvenience of having no good Faſtening for the Branches of the Trees.

There have been ſeveral Trials made of Walls built in different Forms; ſome of them having been built ſemicircular, others in Angles of various Sizes, and projecting more toward the North, to ſcreen off the cold Winds: but there has not been any Method as yet, which has ſucceeded near ſo well, as that of making the Walls ſtrait, and building them upright.

The faireſt Trial which I have ſeen made of circular Walls, was at *Goodwood* in *Suſſex*, the Seat of the Duke of *Richmond*, where, in the Middle of two South Walls, there were two large Segments of Circles, in which there were the ſame Sorts of Fruit-trees planted, as againſt the ſtrait Parts of the Walls: but there never was any Fruit upon the Trees in the circular Part of the Walls, which came to Maturity; nor were the Trees of long Continuance, being blighted every Spring; and in a few Years were totally deſtroyed: and when the Branches of thoſe Trees, which grew upon the ſtrait Parts of the Walls, had extended themſelves ſo far, as to admit of their being led into the circular Parts of the Walls, they were conſtantly blighted and kill'd.

When the Trees which had been planted in the circular Parts were deſtroyed, the Walls were filled with Vines; but the Grapes of the ſame Sort were a full Month later than thoſe growing againſt the ſtrait Parts of the Walls; ſo that they rarely ripen'd, which occaſion'd their being rooted out, and Figs were afterward planted; but the Fruit of theſe ſucceed little better; nor can it be ſuppoſed, that any Trees or Plants will thrive ſo well in theſe Circles, when there is a conſtant Draught of Air round them, which renders the Situation much colder than the open free Air.

I have alſo ſeen at Mr. *Le Cour*'s Garden in *Holland*, ſome Walls built in Angles of different Forms; but theſe ſucceeded no better than the Circles before-mentioned; for I did not find one Tree in Health againſt the Walls; nor did they produce Fruit.

There are ſeveral other Schemes, which have been propoſed by different Perſons, for the building of Walls to accelerate the ripening of Fruits; among which there was a very ingenious Book written ſome Years ago, intituled, *Fruit-walls improv'd, by inclining them to the Horizon*; in which the Author has ſhewn, by Calculation, that there will be a much greater Number of the Rays of the Sun fall upon ſuch Walls, than upon thoſe which are built perpendicular; and from thence has drawn Calculations, that Walls ſo built will be of great Service in the accelerating of Fruit; and has taken the Trouble of calculating the different Inclinations, which ſuch Walls ſhould have in the different Climates, in order to receive the greateſt Number of the Sun's Rays. This Theory ſeems to have all the Demonſtration neceſſary for its Support; but upon Trial has not ſucceeded in the leaſt; for as theſe Walls muſt be built againſt Banks of Earth, the Damps which ariſe from the Ground overbalance the Advantage of the Sun's Rays: beſide, theſe ſloping Walls being more expos d to the cold Dews in the Night, the Fruit will be much more chill'd thereby; and in the Spring the morning Froſts will prove much more deſtructive to the tender Bloſſoms of the Fruit-trees, as they will be more expoſed to them, than againſt an upright Wall: add to this their being much more expoſed to the Winds and the Rain, and it will be found, by comparing the Advantages propoſed from theſe Walls, with the Diſadvantages to which the Fruit-trees will be expoſed, that upright Walls will have the Preference; for it is not the ſtrongeſt Rays of the Sun, in the Heat of Summer, which is ſo much wanting for ripening of Fruit, as the Continuance of a moderate Share of Warmth; and, above all, the having of the Sun in a Morning, to dry off the cold Dews of the Night early, is of the greateſt Uſe; which renders thoſe Walls which are built inclining to the Eaſt preferable to South Walls; as the Fruit will always ripen earlier againſt them.

There are ſome Perſons who recommend the painting of Walls black, or of a dark Colour; as they ſuppoſe the dark Colour will imbibe more of the Sun's Rays, ſo will retain the Warmth longer: this alſo anſwers better in Theory than in Practice; for altho' it muſt be allowed, that a black Wall is warmer to the Touch than a common Brick-wall, yet, as the Fruit generally is ſituated at a ſmall Diſtance from the Wall, it receives no Benefit from the Warmth of the Wall; and it is the reflected Heat which accelerates the ripening of Fruit: therefore I would adviſe every one to make fair Trials of theſe Things, before they put them in Practice, and not to take upon Truſt what they may be told by Perſons who are too ſanguine in recommending to others Schemes which they have adopted upon very ſlight Principles, or perhaps upon a ſingle Trial: this Painting of the Walls is recommended by the ſame Perſon who wrote upon inclining Walls; and he has propos'd this, upon the ſame Principles; but the introducing of theſe Schemes ſhould be avoided, until there have been ſufficient Trials made, to warrant their Uſe.

Where Perſons are willing to be at the Expence, in the building of their Walls ſubſtantial, they will find it anſwer much better than thoſe which are ſlightly built, not only in their Duration, but alſo in their Warmth: therefore a Wall two Bricks thick will be found to anſwer better than one Brick and an half: and if in the building of Garden-walls they are grouted with ſoft Morter, to fill and cloſe all the Joints, the Walls will be much ſtronger, and the Air will not ſo eaſily penetrate thro' the Walls, as it does thro' thoſe which are commonly built.

According to the modern Taſte in Gardening, there are very few Walls built round Gardens; which is certainly very right, not only with regard to the Pleaſure of viewing the neighbouring Country from the Garden, but alſo in regard to the Expence, 1. Of building theſe Walls: 2. If they are planted with Fruit, as is frequently practiſed, to maintain them will be a conſtant Charge, without receiving much Profit or Pleaſure: for when there is too much Walling planted with Fruit-trees, they are ſeldom taken much care of; ſo that the Quantity of Fruit produc'd will be ſmall, and that ill-nouriſh'd, and bad-taſted: therefore the Quantity of Walling ſhould be proportion'd to the Fruit conſumed in the Family: but as it will be neceſſary to incloſe the Kitchen-garden, for the Security of the Garden-ſtuff, ſo, if that be walled round, it will contain as much Fruit as will be wanted in the Family; becauſe the Kitchen-garden is always proportion'd to the Number of Perſons maintained: but if the Quantity of Walling which ſurrounds the Kitchen-garden ſhould be judged too little for the Supply of Fruit, there may be a croſs Wall built thro' the Middle of the Kitchen-garden; or, where the Length of the Garden will admit, there may be two croſs Walls built; but this muſt not be done where there is not room to place the Walls at leaſt eighty Feet aſunder: and as the Kitchen-garden ſhould always be placed out of Sight from the Houſe, the Walls may be hid by Plantations of Trees at ſome little Diſtance, which will be of Uſe in ſheltering the Fruit.

The beſt Aſpect for Walls in *England* is, to have one Point to the Eaſtward of the South; for theſe will enjoy the Benefit of the morning Sun, and will be leſs expos'd to the Weſt and South-weſt Winds (which are very injurious to Fruits in *England)* than thoſe Walls which are built due South. I know there are many Perſons who object to the turning of Walls the leaſt Point to the Eaſt, on account of the Blights which they ſay come from that Quarter in the Spring; but, from many Years Experience and Obſervation, I can affirm, that Blights as often attack thoſe Walls which are open to the South-weſt, as thoſe which are built to any other Aſpect: and I believe, whoever will be at the Trouble to obſerve for ſeven Years, which aſpected Walls ſuffer moſt from Blights, will find thoſe which are built with a Point to the Eaſtward of the South, as ſeldom blighted, as thoſe which are turned to any other Aſpect: therefore, in the Contrivance of a Kitchen-garden, there ſhould be as great Length of theſe Walls built, as the Situation of the Ground will admit.

The next beſt Aſpect is due South, and the next to that South-eaſt, which is preferable to the South-weſt, for the Reaſons before aſſigned: but as there will, for the moſt part, be South-weſt and Weſt Walls in every Garden; theſe may be planted with ſome Sorts of Fruit, which do not require ſo much Heat to ripen them, as thoſe deſign'd for the beſt Walls: but where-ever there are North Walls, thoſe will only be proper for Baking-pears and Plums, Morello-cherries for Preſerving; or ſome Duke-cherries may be planted againſt theſe Walls, to continue them longer in the Seaſon, which will be found very uſeful in ſupplying the Table until Peaches, Nectarines, and Plums, are ripe.

Where Perſons are very curious to have good Fruit, they erect a Trelaſe againſt their Walls, which projects about two Inches from them, to which they faſten their Trees; which is an excellent Method, becauſe the Fruit will be always at a proper Diſtance from the Walls, ſo as not to be injured by them, and will have all the Advantage of their Heat. And by this Method the Walls will not be injured by driveing Nails into their Joints, which, by every Year being drawn out, draws out the Morter from between the Bricks, and thereby makes Holes, in which Snails and other Vermin will harbour, and deſtroy the Fruit; and the Walls will be alſo greatly impaired.

Theſe Trelaſes may be contrived according to the Sorts of Fruit which are planted againſt them. Thoſe which are deſign'd for Peaches, Nectarines, and Apricots (which, for the moſt part, produce their Fruit on the young Wood), ſhould have their Rails three, or, at moſt, but four, Inches aſunder every Way: but for other Sorts of Fruit, which continue bearing on the old Wood, they may be five or ſix Inches apart; and thoſe for Vines may be eight or nine Inches Diſtance. For as the Shoots of Vines are always trained at a much greater Diſtance, than thoſe of any other Sort of Fruit, the Trelaſes for theſe need not be near ſo cloſe; eſpecially as thoſe muſt be for Peaches and Nectarines, whoſe Shoots are generally ſhorten'd to about five or ſix Inches or leſs; ſo that, if the Rails are not pretty cloſe, many of the ſhort Branches cannot be faſten'd to them.

Theſe Trelaſes may be made of any Sort of Timber, according to the Expence which the Owner is willing to beſtow; but Fir is moſt commonly uſed for this Purpoſe, which, if well dried and painted, will laſt many Years; but if a Perſon will go to the Expence of Oak, it will laſt ſound much longer. And if any one is unwilling to be at the Expence of either, then a Trelaſe may be made of Aſh-poles, in the ſame manner as is practiſed in makeing Eſpaliers; with this Difference only, that every fourth upright Rail or Poſt ſhould be very ſtrong, and faſten'd with iron Hooks to the Wall, which will ſupport the Whole: and as theſe Rails muſt be laid much cloſer together, than is generally practiſed for Eſpaliers, theſe ſtrong upright Rails or Poſts will not be farther diſtant than three Feet from each other. To theſe the croſs Rails which are laid horizontally ſhould be well nail'd, which will ſecure them from being diſplaced, and alſo ſtrengthen the Trelaſe; but to the other ſmaller upright Poles, they need only be faſten'd with Wire. To theſe Trelaſes the Shoots of the Trees ſhould be faſten'd with Ozier-twigs, Rope-yarn, or any other ſoft Bandage; for they muſt not be nail'd to it, becauſe that will decay the Woodwork.

Theſe Trelaſes need not be erected until the Trees are well ſpread, and begin to bear Fruit plentifully; before which time the young Trees may be trained up againſt any ordinary low Eſpaliers, made only of a few ſlender Aſh-poles, or any other ſlender Sticks; by which Contrivance the Trelaſes will be new when the Trees come to Bearing, and will laſt many Years after the Trees have overſpread them; whereas, when they are made before the Trees are planted, they will be decayed before the Trees attain half their Growth.

Where theſe Trelaſes are intended to be made againſt new Walls, it will be proper to faſten ſome ſtrong iron Hooks into the Wall, as it is built, at the Diſtance which the upright Poſts are intended to be plac'd; becauſe when theſe are afterwards driven into the Wall, they diſplace the Morter in the Joints, and injure the Wall.

In the building of the Walls round a Kitchen-garden, the Inſides, which are deſign'd to be planted with Fruit-trees, ſhould be made as plain as poſſible, ſo that the Piers ſhould not project on thoſe Sides above four Inches at moſt; and theſe ſhould be plac'd about fourteen Feet aſunder, in ſuch Walls as are deſign'd for Peach and Nectarine-trees; ſo that each Tree may be planted exactly in the Middle between the Piers; which will render them more ſightly, and be better for the Trees: but where Apricots, Plums, or Cherries, are to be planted, the Piers may be only ten Feet aſunder; and againſt every other Pier the Trees ſhould be planted, which will allow them ſufficient room to ſpread; and as the Trelaſe will project as forward as the Piers, the Branches of the Trees may be trained on a Plain: but when the Piers project no more on the Inſide of the Garden, they ſhould be built ſtronger on the Outſide, for the better ſupporting of the Walls.

The uſual Thickneſs which Garden-walls are allow'd, if built with Bricks, is thirteen Inches, which is one Brick and an half: but this ſhould be proportionable to the Height; for if they are all built twelve or fourteen Feet high, as is often practiſed, then the Foundations of the Walls ſhould be at leaſt two Bricks and an half thick, and brought up level to the Surface of the Ground, of the ſame Thickneſs; then they ſhould be ſet off two Inches on each Side, which will reduce them to two Bricks; and five Feet above the Ground, they may be diminiſh'd on each Side, to reduce them to the Thickneſs of a Brick and an half, which muſt be continued to the Top of the Walls.

And the Piers in theſe high Walls, ſhould alſo be proportionably ſtronger than is commonly allow'd to lower Walls; for as theſe will be much more expoſed to ſtrong Gales of Wind, if they are not well built, they will be in Danger of being blown down. Therefore the Piers of theſe Walls ſhould be projected the Length of a Brick on their Back-ſide, and the Thickneſs of a Brick on their Front: and if theſe are built about ten or twelve Feet aſunder, they will greatly ſtrengthen the Walls.

But there is no Neceſſity of building Walls higher than nine or ten Feet, unleſs it be for Pears, which, if properly manag'd, will ſpread over a great Compaſs of Walling; but as only ſome of the lateſt Winter-pears require the Aſſiſtance of a Wall, there need no more but that Part of the Wall where theſe are deſign'd, to be built higher; for Peaches and Nectarines never require a Wall higher than nine or ten Feet, provided they are rightly manag'd; becauſe, whenever they are carried to a greater Height, the lower Part of the Wall is unfurniſhed with bearing Branches. And altho' Apricots, Plums, and Cherries, will frequently grow higher; yet if they are planted at a proper Diſtance, and the Branches trained horizontally from the Bottom, they will not ſoon cover a Wall of this Height: and Vines may be kept as low as any Sort of Fruit; for when they are planted againſt low Walls, they muſt be treated ſomewhat after the ſame manner as thoſe in Vineyards; which is, to cut out the greateſt Part of the Wood which produc'd Fruit the preceding Year, and train in new Shoots for the next Year's Bearing, which are rarely left a Yard in Length; therefore will not require very high Walls.

If the Pears which are deſign'd to be planted, are allow'd a South-weſt Aſpect, on which they will ripen very well; then the Wall to this Aſpect ſhould be built fourteen Feet high or more; for as theſe Trees ſpread very far, when on Free-ſtocks, they ſhould not be ſhorten'd, nor ſtopp'd in their Growth, which will prevent their Bearing, by cauſing them to ſend out a great Number of groſs luxuriant Shouts, which will never produce Fruit: therefore theſe ſhould never be planted amongſt other Sorts of Fruit-trees, which are of ſmaller Growth; becauſe then the Walls muſt appear very unſightly, in having ſome Trees planted more than double the Diſtance which the others require; ſo that as there is no other Sort of Fruit which requires the Aſſiſtance of Walls to ripen their Fruit, which need ſo great room for ſpreading, as Pears, except it be Figs; there will not require a great Quantity of high Walls; for the latter may be planted againſt the Back-walls of Offices or Stables, where there is Conveniency, becauſe this Fruit is ſeldom coveted by Servants; and being planted in Places which are much frequented, they will not be in ſo much Danger of being deſtroyed by Birds, as thoſe which are in private Places. But I ſhall now proceed to give ſome Directions for the building of Hot-walls, to promote the ripening of Fruits, which is now pretty much practis'd in *England*.

In ſome Places theſe Walls are built at a very great Expence, and ſo contriv'd as to conſume a great Quantity of Fuel; but where they are judiciouſly built, the firſt Expence will not be near ſo great, nor will the Charge of Fuel be very conſiderable; becauſe there will be no Neceſſity of making Fires more than three or four Months; beginning about the Middle of *January*, and ending by the Beginning of *June*, when there will be no want of Fires, if the Glaſſes are cloſe ſhut every Night, or in bad Weather: for half an Hour's Sun ſhining on the Glaſſes at this Seaſon, will ſufficiently warm the Air incloſed in the Glaſſes, for the Growth of any of our *European* Fruits.

There are ſome Perſons who plant Vines, and other Fruit-trees, by the Sides of Stoves, and draw ſome of their Branches into the Stove, in order to obtain early Fruit; but this is by no means right, becauſe where the Stove is deſign'd for the Anana's, the Air muſt be kept much warmer for them, than is required for any of the other Fruits; ſo that they can never ſucceed well together; for when there is a ſufficient Quantity of Air admitted, to promote the Growth of the other Fruit, the Anana's are ſtarv'd for want of proper Heat; and ſo, on the contrary, when the Stove is kept up to the proper Heat for the Anana's, it will be too hot for Fruit: and it will alſo be proper to have the Vines on a particular Wall by themſelves, becauſe theſe require to have a greater Share of Air admitted to them, when they begin to ſhoot, than Peaches or Nectarines; ſo that it is by much the better Method to have them ſeparate.

The ordinary Height of theſe Hot-walls is about ten Feet, which will be ſufficient for any of thoſe Sorts of Fruits which are generally forced; for by this the Trees are commonly weaken'd in their Growth, ſo that they will not grow ſo vigorouſly as thoſe which are always expoſed to the open Air; and where there is not a Quantity of Walling planted ſufficient to let one Part reſt every other Year, the Trees will never be very healthy, and will laſt but a few Years. The Quantity of Walling to produce early Fruit for a middling Family, cannot be leſs than eighty or one hundred Feet in Length; therefore where a Perſon is deſirous to have the Fruit in Perfection, and the Trees to continue in a good Condition many Years, there ſhould be three times this Quantity of Walling built; ſo that by dividing it into three Parts, there will be two Years for the Trees to recover their Vigour between the Times of their being forc'd; whereby a greater Quantity of Bearing-wood may be obtain'd, and the Fruit will be fairer, and in larger Quantities, than when they are forc'd every other Year; and as the Glaſſes may be contriv'd ſo as to move from one to the other, the Expence of building the Walls ſo much longer, will not be very great, becauſe the Frames and Glaſſes will be the ſame as for one Year's Fruit.

The Foundations of theſe Walls ſhould be made four Bricks and an half thick, in order to ſupport the Flues; otherwiſe, if Part of them reſt on Brick-work, and the other on the Ground, they will ſettle unequally, and ſoon be out of Order; for where-ever there happen any Cracks in the Flues, thro' which the Smoke can make its Eſcape, it will prevent their Drawing; and if the Smoke gets within the Glaſſes, it will greatly injure the Fruit. This Thickneſs of Wall need not be continued more than ſix Inches above the Ground, where ſhould be the Foundation of the firſt Flue; which will raiſe it above the Damps of the Earth: then the Walls may be ſet off four Inches on each Side, which will reduce it to the Thickneſs of three Bricks and an half; ſo that the Back-wall may be two Bricks thick, which is abſolutely neceſſary to throw the Heat out more in Front; for when the Back-walls are built too thin, the Heat will eſcape thro' them. The Wall in Front next to the Fruit, ſhould be only four Inches thick: whereby there will be an Allowance of nine Inches for the Flues, which may be cover'd with ten Inch Tiles; for if they have half an Inch Bearing on each Side, it will be ſufficient.

The Ovens in which the Fires are made, muſt be contrived on the Back-ſide of the Walls, which ſhould be in Number proportionable to the Length of the Walls. The Length uſually allow'd for each Fire to warm, is forty Feet; tho' they will do very well for fifty Feet: but I would not adviſe the Flues to be longer than this is to each Fire; becauſe when they are made at a great Diſtance, there is a Neceſſity of making the Fires ſo much ſtronger to warm them; which will occaſion the Heat to be too violent near the Fires. Theſe Ovens ſhould be ſhedded over, to keep out the Wind and Rain; otherwiſe the Fires will not burn. Some People make theſe Sheds of Timber; but it is much better to build them of Brick, and tile them over; becauſe the wooden Sheds will in a few Years decay, and afterward will be a conſtant Charge to keep in Repair; and beſides, they may be in Danger of firing, if great Care is not conſtantly taken of the Fires. As it is abſolutely neceſſary to have the Ovens below the Foundation of the firſt Flues, there muſt be Steps down into the Sheds, to come to the Mouth of the Ovens to ſupply the Fuel. Therefore the Sheds ſhould not be narrower than eight Feet in the Clear; for as the Steps will require four Feet Space, there ſhould be at leaſt four Feet more for the Perſon who attends the Fire, to have room to turn himſelf to clear out the Aſhes, and to put in the Fuel. Where the Length of Walling requires two Ovens, it will be proper to have them in the Middle included in one Shed, which will ſave Expence, and allow more room to attend the Fires; for in this Caſe the Sheds muſt be at leaſt ten Feet long, and then they need not be more than ſix in Breadth. The Steps down into theſe ſhould be at one End; ſo that the Door opening into the Sheds, will not be oppoſite to the Mouths of the Ovens: whereby the Fires will burn more regular; for whenever the Doors are contriv'd to front the Mouths of the Ovens, if the Wind ſets directly againſt them, it will cauſe the Fire to burn too fiercely, and the Fuel will be ſoon conſum'd.

Theſe Ovens may be contriv'd in the ſame manner as thoſe which are already deſcrib'd for Stoves: wherefore I ſhall not repeat it again in this Place; but muſt obſerve, that when the two Ovens are join'd together, there ſhould be a Partition-wall at leaſt two Bricks thick between them, otherwiſe the Fires will ſoon deſtroy it; and if there ſhould be the leaſt Hole in the Wall, thro' which the Smoke of the two Fires can communicate, it will prevent their Drawing.

The lower Flue, thro' which the Smoke firſt paſſes from the Fire, may be two Feet and an half deep; therefore the Back-wall ſhould be two Bricks thick, as high as to the Top of this Flue; and then it may be ſet off to a Brick and an half Thickneſs, which muſt be continued to the Top of the Wall. The ſecond Flue, which ſhould return over the firſt, may be made

made two Feet deep, the third a Foot and an half, and the fourth one Foot deep; which four Flues, with their Coverings, will riſe near eight Feet in Height; ſo that there will be about two Feet left for the fixing of the Frames at the Top to ſupport the Glaſſes, and for coping the Wall. And theſe four Returns will be ſufficient to warm the Air in the Frames; for the Smoke will have loſt its Heat by the time it has paſſed thus far.

In the carrying up of theſe Walls, there ſhould be ſome ſtrong iron Hooks faſten'd at convenient Diſtances, which ſhould project about two Inches from the Wall, to which the Trelaſe muſt be faſten'd, which is to ſupport the Trees. Theſe Hooks ſhould be long enough to faſten into the Back-wall; for the Wall in Front, being but four Inches thick, will not be ſtrong enough to ſupport the Trelaſe: but, in placing of them, Care ſhould be had not to lay them croſs the Middle of the Flues, becauſe they would obſtruct the clearing the Flues of Soot, when ever there ſhould be occaſion: ſo that the beſt Way is to lay them juſt under the Tiles which cover each Flue, at about three Feet aſunder; which will be near enough, provided the Hooks are made ſufficiently ſtrong. As the Flues muſt be well plaſter'd with Loam on their Inſide; ſo, likewiſe, ſhould the Loam be ſpread under the Tiles, which cover them, to the Thickneſs of the Hooks, that the Flues may be very ſmooth; otherwiſe the Soot will hang to the iron Hooks, and ſtop the Smoke from paſſing. It will alſo be very proper to cover theſe Flues on the Side next the Trelaſe with Hop-bags, or ſome ſuch coarſe Cloth, in the ſame manner as hath been directed for the Stoves; which will make them ſo tight, that no Smoke will find its Way, which, without this Covering, it is very apt to do, thro' the Joints of Walls; eſpecially when they are ſo thin as theſe muſt be built: and this Covering will ſtrengthen the Wall of the Flues, and join the whole Work together. If, at each End of theſe Flues, there are ſmall Arches turn'd in the Back-walls, in ſuch a manner that there may be Holes open'd to clean the Flues of Soot, whenever there is a Neceſſity for it, the Trouble will be much leſs than to open the Flues in Front; and there will be no Damage done to the Trees, nor will the Flues be the leaſt injured by this, which they muſt be, when they are open'd in Front.

The Borders in Front of theſe Hot-walls ſhould be about four Feet wide, which will make a ſufficient Declivity for the ſloping Glaſſes; and in theſe Borders there may be a Row of dwarf Peas planted to come early, or a Row of dwarf Kidney-beans, either of which will ſucceed very well; and if if they are not planted too near the Trees, will not do them any Injury. On the Outſide of theſe Borders ſhould be low Walls erected, which ſhould riſe about an Inch or two above the Level of the Borders; upon which the Plate of Timber ſhould be laid, on which the ſloping Glaſſes are to reſt: and this Wall will keep up the Earth of the Border, as alſo preſerve the Wood from rotting.

The Glaſſes which are deſign'd to cover theſe Walls, muſt be divided into two Ranges; for as they muſt reach from the Ground-plate (juſt above the Level of the Border) to almoſt the Top of the Wall, they will be near twelve Feet long; which will be too great Length for ſingle Frames, which, when they are more than ſix Feet long, are too heavy to move, eſpecially if the Frames are made of a proper Strength to ſuſtain the Glaſs. Theſe Frames ſhould be contriv'd in ſuch manner, as that the upper Row may ſlide down; and by making on one Side three ſmall Holes in the Wood-work which ſupports the Frames, at about a Foot Diſtance, and having a ſmall iron Pin to fix into them, the top Glaſſes may be let down one Foot, two Feet, or three Feet, according as there may be Occaſion. The lower Row of Glaſſes may be contrived ſo as to take eaſily out: but as they muſt lie ſloping, and the upper Row muſt bear on them, they cannot be contriv'd to ſlide upward; nor indeed will there be any Occaſion of their moving; becauſe it is much better to let the Air in at the Top, than in the Front of the Trees.

The ſloping Timbers, which are to ſupport the Glaſs-frames, muſt be faſten'd at Bottom, into the Ground-plate in the Front of the Border, and at the Top into ſtrong iron Cramps fix'd in the upper Part of the Wall for that Purpoſe. Theſe Timbers ſhould be made of Fir, which will not twiſt as Oak and ſome other Wood will, where it is laid in ſuch Poſition. They muſt be made ſubſtantial, otherwiſe they will not laſt many Years, eſpecially as they are deſign'd to be moveable. On the Top of theſe ſhould be fix'd a ſtrong Board, under which the upper Row of Glaſſes ſhould run. The Uſe of this Board is, to ſecure the upper Part of the Glaſſes from being rais'd by the Winds, and alſo to keep the Wet from getting to the Trees: therefore it ſhould be join'd as cloſe as poſſible to the Wall, and ſhould project about two Inches over the Glaſs-frames; which will be enough to throw the Wet on the Glaſſes, and likewiſe to ſecure them faſt down.

The Breadth of theſe Frames for the Glaſſes may be about three Feet, or a little more, according as the Diviſions of the Length of the Wall will admit; for a ſmall Matter in their Width is of no Conſequence, provided they are not too wide to be eaſily moved; for when they are wider than a Man can eaſily reach with his Arms, to manage, they will be very troubleſome to carry from one Place to another. The Bars of theſe Frames, which are to ſupport the Glaſs, ſhould be plac'd lengthwiſe of the Frames; for when they are plac'd acroſs, they ſtop the Moiſture which is lodg'd on the Inſide of the Glaſſes, and cauſe it to fall in Drops on the Borders at every Bar; which will be very injurious to any Plants which are put there; and, if it falls on the Trees, will greatly damage them, eſpecially when they are in Bloſſom. The Lead into which the Glaſſes of theſe Frames are fix'd, ſhould be very broad, and the Joints well cemented; otherwiſe the Wet will find an eaſy Paſſage thro', and do great Damage to the Fruit.

At each End of the Range of Glaſſes, there will be an angular Space between the Glaſſes and the Wall, which muſt be cloſely ſtopp'd to prevent the Air from getting in, which might greatly injure the Fruit. Theſe are by ſome Perſons cloſely boarded up; but if they are cloſed with Glaſſes, ſo contriv'd as to open to let in Air at proper times, it will be of great Advantage; becauſe when the Wind may be too ſtrong againſt the Front-glaſſes, one or both of theſe End-glaſſes may be open'd, according to the Warmth of the Air incloſ'd; which will be often very uſeful to cool the Air, and to admit a ſmall Quantity of freſh Air to the Fruit.

The Sorts of Fruit, which are uſually planted for forcing, are Cherries, Plums, Apricots, Peaches, and Nectarines: but the two laſt-mention'd rarely ſucceed well; nor will the Trees continue long; ſo that they are ſcarce worth planting againſt Hot-walls. As for the Vines, I would propoſe they ſhould be planted by themſelves againſt a particular Wall; for as they will require more Air to be admitted to them when they begin to ſhoot, than any of the above-mention'd Fruits, they will not all ſucceed, if they are included in the ſame Frame. As to the others, they will do very well in the ſame Border, and will demand the ſame Temperature of Warmth. The beſt of theſe Sorts to plant againſt theſe Hot-walls, are thoſe here mention'd:

Cherries.

The Early May, and May Duke.

Plums.

The Jean Hative, or White Primordian.

The Early Black Damaſk, or Morocco.

The Great Damaſk Violet of *Tours*.

The Drap d'Or.

Peaches.

The Red Nutmeg.

The Red Magdelain.

The Montauban.

Nectarines.

Fairchild's Early Nutmeg.

The Elruge.

Apricot.

The Maſculine.

Theſe, being the Sorts which ripen early, are the moſt proper to plant againſt theſe Walls, Altho' ſome of them are not ſo valuable as other Sorts of theſe Fruits; yet, as they naturally ripen three Weeks or a Month earlier in the Seaſon, they will be very early ripe, when they are brought forward by artificial Warmth.

In the preparing of the Borders for planting theſe Fruit-trees, there ſhould be the ſame Care taken, as for thoſe againſt open Borders; which, being fully treated of in the former Part of this Work, I ſhall not repeat here. There muſt alſo be the ſame Care in training up the Trees, when they ſhoot: but the Trelaſes need not be made againſt theſe Walls, until the Trees are grown large enough to ſpread, and produce a Quantity of Fruit; till which time they may be ſupported by any low ordinary Trelaſe, which will do very well till the time that the Trees will have Strength enough to force, which will not be until the fourth or fifth Year after planting, according to the Progreſs they have made; for if they are forc'd too young, it will weaken them ſo much, as that they ſeldom make vigorous Trees afterward: beſides, the Quantity of Fruit which ſuch young Trees produce, is not worth the Expence and Trouble of Forcing; for the Quantity of Fuel uſed, and the Trouble, will be the ſame for ſmall Trees, which are not capable of producing more than ſix or eight Fruit each, as for thoſe Trees which may produce three or four dozen: ſo that the longer time the Trees have to grow before they are forc'd, the better they will pay for the Trouble and Expence.

But it will be the beſt way not to have any of the Frames made, nor the Trelaſe, or any other of the Wood-work, until the Trees are ſtrong enough to force: for if theſe are done when the Walls are firſt built, as is by ſome Perſons practiſed, they will be half decay'd, before there is any Uſe for them: but then the Perſons who are employ'd in making the Trelaſe, muſt be very careful in putting it up, not to injure the Trees.

When the Trees have acquired Strength enough to produce a Quantity of Fruit, that Part which is deſign'd to be forc'd the followiing Spring, ſhould be carefully pruned at *Michaelmas*; when the very weak Shoots muſt be cut out or pruned very ſhort, becauſe theſe, by being forc'd, will for the moſt part decay; and tho' ſome of them may be full of Flower-buds, yet theſe Shoots, being weak, cannot nouriſh them; ſo that the Flowers having exhauſted all the Sap, the Shoots die ſoon after, and rarely produce any Fruit. The other more vigorous Shoots ſhould alſo be ſhorten'd to a proper Length after the ſame manner as is directed for thoſe Trees in the open Air; with this Difference only; *viz.* that theſe which are deſign'd for forcing, ſhould not have their Shoots left ſo long, becauſe the forcing of them will weaken them; and conſequently, ſhould there be as great a Length of Branches, there will probably be a greater Number of Fruit on them; becauſe, as theſe will be ſcreen'd from the open Air, they will not be liable to Blaſts; and the having too many Fruit on the Trees, will render them ſmall, and alſo too much weaken the Trees: then the Shoots ſhould be all regularly faſten'd to the Trelaſe at a proper Diſtance from each other; ſo that when the Branches ſhoot the following Spring, they may not overhang each other. The Reaſon for my adviſing theſe Trees to be pruned ſo early in the Seaſon, is, that thoſe Branches which are left on, may enjoy the whole Nouriſhment of the Sap; ſo that the Buds will become very turgid during the Winter-ſeaſon, and will be prepared to open when the Fires are ſet to work.

The time for beginning to make the Fires is about the Middle or Latter-end of *January*, according as the Seaſon is more or leſs favourable; for if the Trees are forc'd too early into Flower, they will be in ſome Danger of miſcarrying, if the Weather ſhould prove ſevere; ſo that it is by much the ſureſt Method to begin about the time here directed, becauſe there will be a Neceſſity of admitting freſh Air to the Trees when they are in Flower; which cannot be done with Safety, when they flower in very bad Weather. And thoſe Trees which are forc'd into Flower by the Beginning of *February*, will ripen their Fruit as early as moſt People will deſire to eat them; for the Cherries will ripen early in *April*, and the Apricots by the Beginning of *May*; and ſoon after, the Plums, Peaches, and Nectarines, will be ripe.

There are ſome Perſons who plant Strawberries in their Borders before their Fruit-trees, in order to have early Fruit, which often ſucceed very well: but where-ever this is practiſed, great Care ſhould be taken to keep them from ſpreading over the Border, becauſe theſe Plants will exhauſt the principal Goodneſs of the Earth, and thereby injure the Trees; ſo that when it is deſign'd to have Strawberries in theſe Borders, I would adviſe, that the Roots ſhould be either planted in Pots, or ſingly at a good Diſtance on a ſhady Border of loamy Earth, one Year before they are deſign'd to be forc'd; during which time the Runners ſhould be diligently pull'd off, to encourage the main Root for Fruiting; and at *Michaelmas* theſe Plants may be tranſplanted, with large Balls of Earth to their Roots, into the Borders,

ders, before the Fruit-trees which are to be forc'd the following Spring; ſo that they may have time to get new Root before that Seaſon; and if theſe Plants are carefully watered when they begin to ſhew their Flower-buds, they will produce a good Quantity of Fruit, which will ripen the Latter-end of *April*, or the Beginning of *May*: but then I would alſo adviſe, that theſe Plants be taken away as ſoon as they have done bearing, that they may not rob the Trees of their Nouriſhment.

Since I have mention'd this Method of having early Strawberries, I ſhall take the Liberty to inſert another Method, which is often practis'd to obtain this Fruit early in the Spring, tho' it doth not ſo properly come under this Article; which is, to train up the Plants either in Pots or Borders, after the manner before directed, for at leaſt one Year or more: then, about the Beginning of *February*, there ſhould be a moderate Hot-bed prepared, in Length proportionable to the Number of Plants deſigned to be forc'd; and the Breadth ſhould be proportionable to the Width of the Frames which are deſign'd to cover them. Theſe Frames may be ſuch as are uſed for common Hot-beds, to raiſe early Cucumbers, *&c.* This Hot-bed muſt be cover'd with freſh loamy Earth about eight Inches thick, into which the Strawberry Plants ſhould be plac'd, with large Balls of Earth to the Roots, as cloſe as they can conveniently be planted (for, as they muſt be kept clear from Runners, they will not ſpread much during the time they remain in the Bed, which will be no longer, than until their Fruit is gone). Then they ſhould be gently water'd to ſettle the Earth to their Roots, which muſt be frequently repeated as the Earth becomes dry, otherwiſe they will produce but few Fruit. While the Nights continue cold, the Glaſſes of the Hot-bed ſhould be cover'd with Mats, to preſerve a kindly Warmth in the Beds: but in the Day-time, when the Weather is favourable, the Glaſſes ſhould be rais'd to admit freſh Air to the Plants; for if they are too much drawn (eſpecially when they begin to flower), they will not produce much Fruit. If the Seaſon ſhould continue long cold, and the Heat of the Beds ſhould decline, it will be proper to lay ſome freſh Hot-dung round the Sides of the Beds to renew their Heat, being always careful not to make them too hot; that will ſcorch their Roots, and prevent their Fruiting. If the Plants which are planted in theſe Beds are ſtrong, and in a good Condition for bearing; and Care be taken in tranſplanting of them to preſerve good Balls of Earth to their Roots, as alſo to keep a due Temperature of Warmth in the Beds; they will produce ripe Fruit by the End of *April*, or the Beginning of *May*, in Plenty; and will continue bearing, until ſome of thoſe in the open Air come in to ſucceed them.

The beſt Kinds of Strawberries to plant for forcing, are the Scarlet; for the Hautboys grow too rampant for this Purpoſe.

But to return to the Subject of Hot-walls: what I have here inſerted concerning the forcing of Fruits, has been only to obtain theſe Fruits earlier in the Seaſon, than they would naturally ripen againſt common Walls. But in ſome Parts of *England*, where moſt of our good Kinds of Fruit ſeldom ripen, it might be very well worth while to build ſome of theſe Walls, to obtain good Fruit from the beſt Kinds of Peaches, Plums, *&c.* eſpecially in ſuch Places where Fuel is plenty, becauſe there the Expence will not be great after the firſt Building of the Walls. For I would not propoſe to have Coverings of Glaſs, excepting for a ſmall Proportion of the Walls; the reſt may have Frames of Canvas, to ſhut over them, in the ſame manner as the Glaſſes are contriv'd; which will ſucceed very well, where proper Care is taken: for as there will not be Occaſion to cover theſe Trees until the Latter-end of *February*, at which time alſo the Fires muſt be made; ſo, before the Trees are in Flower, the Weather may be frequently warm enough to open the Covers to admit Sun and Air to the Trees in the Middle of the Day; for if theſe Covers are kept too cloſely ſhut, the Shoots of the Trees will draw very weak, and their Leaves will turn pale, for want of Light and Air. And as the Deſign of theſe Contrivances is only to bring the Trees five, or, at moſt, ſix, Weeks earlier, than they would naturally come againſt common Walls, there will be no Neceſſity of making very large Fires, or keeping the Covers too cloſely over the Trees.

Inſtead of Canvas for theſe Covers, oiled Papers may be uſed; which ſhould be done in the manner directed for raiſing of Melons, by paſting as many Sheets of Paper together, as will fit the Frames on which they are to be fix'd; and when the Paſte is dry, the Paper ſhould be faſten'd into the Frames, and then the Oil rubb'd over on the Outſide with a Bruſh, which will ſoak thro' the Paper; and when the Paper is dry, the Covers may be uſed. This Paper will laſt very well one Seaſon, and the Expence of repairing it will not be very great: wherefore theſe are to be preferr'd to the Canvas, becauſe all Sorts of Plants will thrive much better under them, than they will under Canvas, or any other cloſe Covering, which will not admit the Light ſo well thro' to the Plants.

The Frames deſign'd for either Canvas or Paper, may be made much ſlighter than thoſe for Glaſs; becauſe theſe, being very light, will not require much Strength to ſupport them. And if theſe are well painted, and every Year, when their Uſe is over, carried into Shelter, they will laſt a long time; for they will not be wanted abroad longer than four Months; *viz.* from the End of *February* to the End of *May*; for after this time the Fruit will not require any Covering, the Trees being then full of Leaves; and the young Shoots will by that time have made ſuch Progreſs, as to become a good Defence for the Fruit: but theſe Covers ſhould not be too ſuddenly taken away; but by degrees the Trees ſhould be enured to the open Air; otherwiſe the Change will be too great, and may occaſion moſt of the Fruit to fall off, eſpecially if cold Nights ſhould follow.

By this Method Gentlemen may be ſupplied with moſt of the beſt Kinds of Fruit, in the Northern Parts of *England*; where, without ſome ſuch Care, they can expect very little good Fruit in their Gardens. And as Coal is in great Plenty in thoſe Places, the Expence will be very little; therefore I am ſurpriſed, that moſt of the Gentlemen who live in the North, do not put this Method in Practice. That there are ſome few of theſe Walls built in the North, is well known; but then they are chiefly deſign'd to produce a little early Fruit, more for Curioſity than any real Uſe: and theſe Walls are, for the moſt part, ſo ill contriv'd, that four times the Fuel is expended, as will be requiſite when the Walls are built after the manner here directed: and where the Heat is not pretty equally diſtributed thro' every Part of the Wall, ſome of the Trees will have too much Heat, while others will have little Benefit from the Fires.

There are ſome Perſons who build their Hot-walls in ſuch a manner, as to have the greateſt Heat under the Border, near to the Roots of their Trees, ſuppoſing there is a Neceſſity of Heat to the Roots, as well as the Branches: but this is a great Miſtake; for the Fires, ſo ſituated, muſt greatly injure the Roots of the Trees, by drying up the Moiſture of the Earth, as alſo in ſcorching the tender Fibres of thoſe Roots which lie near them. Therefore this Practice ſhould not be continued; for it is much the better Method to elevate the firſt Flue nine Inches, or a Foot, above the Level of the Border, according as the Ground is dry or wet, than to place it the leaſt below-ground, which will only dry the Earth, and not warm the Air about the Trees, which is the only Uſe of artificial Heat: for it is very commonly practis'd to draw a Branch of a Vine, or other Fruit-tree, into a Stove; which Branch will produce its Fruit as early as if the whole Tree had been forc'd: when, at the ſame time, all the other Branches of the ſame Tree, which are expos'd to the open Air, will not be the leaſt forwarded, tho' they are all nouriſh'd by the ſame Root: which is a plain Proof, that there is no Neceſſity of adding any Warmth to the Roots of Fruit-trees, to have their Fruit earlier or better ripen'd.

I have alſo heard of ſome Walls which have been built for Forcing of Fruit, with one continued Chaſm from their Bottoms to the Tops; ſo that they have been like double Walls, with Places at proper Diſtances to make the Fires: but theſe can be of little Uſe; for if the Vents are open at their Tops to let out the Smoke, the Heat will alſo eſcape with it; becauſe, if the Smoke be not led about three or four times in Flues, in order to warm the Bricks, the Heat will paſs off at top, without doing much Service to the Trees.

Where the Walls are planted with the beſt Kinds of Fruit, which are deſign'd to ripen them in Perfection; if the Autumns ſhould prove cold, or very wet, before the Fruit are ripe, it will be proper to put the Covers over the Trees: and if there are ſome ſlow Fires made to dry off the Damps, it will be of great Uſe to prevent the Fruit from growing mouldy, and to haſten their Ripening. But when this is practiſed, the Covers ſhould be taken off whenever the Weather will admit of it, that the Fruit may enjoy the Benefit of the free Air, without which they will be inſipid or ill-taſted.

Although in the former Directions for forcing Trees, in order to have early Fruit, I have adviſed, that ſuch Trees ſhould have one or two Years Reſt, in order to recover Vigour; yet that is not to be underſtood of theſe Trees, which are only deſign'd to be brought forward enough to produce their Fruit in Perfection: for, as the Fires are not deſign'd to be made till the Middle or End of *February*, the Trees will not be ſo much weakened thereby; becauſe they will be enured to the open Air long before their Fruit is ripe, and will have time to ripen their Shoots, and form their Buds, for the next Year's Bearing: therefore theſe Trees may be thus forced every Year, without doing them any Injury, provided the Trees are carefully manag'd.

In Forcing of Fruit-trees, People generally hang up Thermometers under their Glaſſes, for the better adjuſting the Heat, and regulating the Fires. But when this is practiſed, they ſhould be hung where the Sun can never ſhine on them; for one Hour's Sunſhine upon the Ball of the Thermometer, in the Spring of the Year, will ſo much rarefy the Spirits, that they will riſe to the Top of the Tube; when, at the ſame time, the circumambient Air may not be much more than of a temperate Heat. But as the principal Uſe of theſe Thermometers is to regulate the Fires, they are ſeldom of much Uſe in the Day-time; becauſe, if there be only one Hour's Sunſhine in the Day on the Glaſſes, it will warm the Air ſufficiently for the Production of *European* Fruits, without any additional Heat; wherefore there will rarely be any Occaſion for continuing of the Fires in the Day: and if, by the Fires in the Night, the Air is warmed to the temperate Point mark'd on the Botanic Thermometers, the Fruit will thrive better than in a greater Heat.

There are ſome Perſons near *London*, who make it their Buſineſs to produce early Fruit to ſupply the Markets; which they perform by the Heat of Dung only, having no Fire-walls in their Gardens. The Method which theſe People follow, is, to have good Quantity of new Dung laid in an Heap to warm (after the ſame manner as is practiſed for making of Hot-beds). When this Dung is in a proper Temperature of Heat, they lay it cloſe on the Back-ſide of their Fruit-wall, about four Feet thick at the Bottom, and ſloping to about ten Inches or a Foot thick at the Top. This Dung ſhould be gently beat down with a Fork, to prevent the Heat going off too ſoon; but it ſhould not be trodden down too hard, leſt that ſhould prevent its Heating. The Outſide of the Dung ſhould be laid as ſmooth as poſſible, that the Wet may run off more eaſily; and if there is a Covering of Thatch, as is ſometimes practis'd, it preſerves the Dung from rotting too ſoon; whereby the Heat is continued the longer. The time for laying this Dung to the Back of the Wall, is the ſame as for making the Fires; *i. e.* about the Middle or End of *January*. The firſt Parcel of Dung will continue warm about a Month or five Weeks; when there ſhould be a Supply of new Dung prepared, and the old taken quite away, or mixed up with this new Dung, to renew the Heat; which, if it works kindly, will be ſufficient to laſt the Seaſon. Theſe Walls are cover'd with Glaſſes or Canvas, in the ſame manner as the Fire-walls; and the Trees muſt be treated the ſame way: but there muſt be more Care taken to open the Glaſſes againſt theſe Walls, whenever the Weather will permit; otherwiſe the Steams of the Dung will occaſion a great Dampneſs through the Wall; which, if pent in about the Trees, will be very pernicious to them, eſpecially at the time they are in Flower.

By this Method ſome Gardeners have forced long Walls filled with old well-grown Fruit-trees, which have produced great Quantities of Fruit annually; which has well anſwer'd their Expence. But as, in many Parts of *England*, it will be very difficult to procure a ſufficient Quantity of new Dung for this Purpoſe, the Fire-walls are moſt uſeful, and leaſt expenſive.

I have ſeen in ſome Places long Timber-fences erected to force Fruit-trees, by laying new Dung againſt the Back-ſide, in the ſame manner as is practis'd for the Walls; but theſe are by no means proper, becauſe the Steam of the Dung will eaſily get through every little Crack or Joint of the Boards, to the great Prejudice of the Trees: beſides, theſe Boards will continue very damp, ſo long as any Moiſture remains in the Dung, which will alſo be very injurious to them; and as theſe Boards will in a few Years decay, ſo theſe will be the moſt expenſive, if they are kept in Repair for ſome Years, and will never anſwer the Deſign ſo well as Walls.

WALL-FLOWER. *Vide* Leucoium.

WALNUT. *Vide* Juglans.

WALTHERIA.

The *Characters* are;

It is a Plant of the malvaceous Tribe: the Empalement of the Flower is of one Leaf, ſlightly cut at the Brim into five Parts: the Flower is compos'd of five Leaves, which ſpread open: in the Centre is ſituated the oval Pointal, attended by five Stamina, *which coaleſce with the Style, ſo as to form one cylindrical Body: the Empalement incloſes one Seed-veſſel, which opens in two Valves, having one obtuſe Seed.*

The *Species* are;

1. Waltheria *foliis cordato-ovatis ſerratis. Lin. Hort. Cliff.* Waltheria with oval heart-ſhaped Leaves ſawed on their Edges.

2. Waltheria *foliis lanceolatis ſerratis. Flor. Leyd.* Waltheria with ſpear-ſhap'd Leaves ſawed on their Edges.

This Genus of Plants is deſcrib'd in the *French* Memoirs of the *Academy of Sciences* by Monſ. *D'Iſnard*, who has given it the Title of *Monoſpermalthæa:* from the Habit of the Plant being like *Althæa*, but having a ſingle Seed to each Flower, he compounded this Name: but Dr. *Linnæus* has altered it to this of *Waltheria*, in Honour to *Auguſtus Frederic Walther*, Profeſſor at *Leipſic*, who is a curious Botaniſt.

Both theſe Plants grow plentifully in moſt of the Iſlands in the *Weſt-Indies*, from whence I have receiv'd their Seeds, which have ſucceeded very well; and the Plants perfect their Seeds annually, when they are plac'd in the Tan-bed in the warm Stove.

They grow ſhrubby, and riſe to to the Height of ſix or eight Feet, ſending out long lateral Branches, which are garniſh'd with ſoft woolly Leaves, placed alternately. The Flowers are ſmall, of a yellow Colour, and are many of them collected in an Head. Theſe grow upon long Foot-ſtalks, which ariſe from the Wings of the Leaves. The Flowers are of ſhort Duration, and make but an indifferent Appearance; ſo the Plants are ſeldom preſerved, but in Botanic Gardens, for the ſake of Variety.

Theſe Plants are too tender to live in the open Air in *England*, not even in the Summer-ſeaſon; nor do they thrive well, unleſs the Pots are plung'd in the Hot-bed of Tanners Bark: ſo that the Seeds muſt be ſown on an Hot-bed, and when the Plants are fit to tranſplant, they muſt be each planted into a ſeparate ſmall Pot, and plung'd into a freſh Hot-bed; and afterward treated in the ſame manner, as other tender Plants of the ſame Country. The ſecond Year the Plants will flower, and produce good Seeds; but they may be continued three or four Years, if the Plants are often ſhifted, and their Roots pared, to keep them within Compaſs; for if the Plants are permitted to remain long undiſturbed in in the Tan-bed, their Roots will run out through the Holes in the Bottom of the Pots, and extend to a great Diſtance in the Tan: and when this happens, if their Roots are torn, or cut off, the Plants ſeldom ſurvive it. When the Plants root into the Tan, they grow very luxuriant, and cannot be kept within reaſonable Compaſs; but on their Roots being diſturb'd, their Branches will hang, and their Leaves ſhrivel up, and drop off. Therefore, to keep theſe Plants within Bounds, they ſhould be drawn up out of the Tan, at leaſt once in three Weeks, during the Summer-Seaſon; and the Plants ſhifted out of the Pots once in two Months: with this Management they may be continued ſeveral Years.

WATER is one of the moſt conſiderable Requiſites belonging to a Garden: if a Garden be without it, it brings a certain Mortality upon whatſoever is planted. By Waterings the great Droughts in Summer are allay'd, which would infallibly burn up moſt Plants, had we not the Help of Water to qualify the exceſſive Heats; beſides, as to noble Seats, the Beauty which Water will add to them in making *Jets d'Eau*, Canals, and Caſcades: therefore they are ſome of the nobleſt Ornaments of a Garden.

WILDERNESSES, if rightly ſituated, artfully contrived, and judiciouſly planted, are very great Ornaments to a fine Garden; but it is rare to ſee theſe ſo well executed in Gardens as could be wiſh'd, nor is it often they are judiciouſly ſituated: for either they are ſo ſituated as to hinder a diſtant Proſpect, or elſe are not judiciouſly planted: the latter of which is ſcarce ever to be found in any of our moſt magnificent Gardens, very few of their Deſigners ever ſtudying the natural Growth of Plants, ſo as to place them in ſuch manner, that they may not obſtruct the Sight from the ſeveral Parts of the Plantation which are preſented to the View: I ſhall therefore briefly ſet down what has occurred to me from time to time, when I have conſider'd theſe Parts of Gardens; whereby a Perſon will be capable to form an Idea of the true Beauties, which ought always to be ſtudied in the Contrivance of Wilderneſſes.

1. Wilderneſſes ſhould always be proportion'd to the Extent of the Gardens in which they are made, that they may correſpond in Magnitude with the other Parts of the Garden; for it is very ridiculous to ſee a large Wilderneſs planted with tall Trees in a ſmall Spot of Ground; and, on the other hand, nothing can be more abſurd, than to ſee little paltry Squares or Quarters of Wilderneſs-work, in a magnificent large Garden.

2. As to the Situation of Wilderneſſes, they ſhould never be placed too near the Habitation; becauſe the great Quantity of Moiſture which is perſpired from the Trees, will cauſe a damp unwholſome Air about the Houſe, which is often of ill Conſequence: nor ſhould they be ſituated ſo as to obſtruct any diſtant Proſpect of the Country; which ſhould always be preſerved wherever it can be obtained; there being nothing ſo agreeable to the Mind as an unconfined Proſpect of the adjacent Country. But where the Sight is confined within the Limits of the Garden from its Situation, then there is nothing ſo agreeable to terminate the Proſpect, as a beautiful Scene of the various Kinds of Trees judiciouſly planted; and if it is ſo contrived, that the Termination is planted circularly, with the Concave toward the Sight, it will have a much better Effect, than

if it end in ſtrait Lines or Angles, which are never ſo agreeable to the Mind.

3. The Plants ſhould always be adapted to the Size of the Plantation; for 'tis very abſurd to ſee tall Trees planted in ſmall Squares of a little Garden; and ſo likewiſe, if in large Deſigns are planted nothing but ſmall Shrubs, it will have a mean Appearance. It ſhould alſo be obſerved, never to plant Ever-greens amongſt deciduous Trees; unleſs it be toward the Front or Borders of the Plantation chiefly in Sight; becauſe theſe afford a continual Pleaſure both in Summer and Winter, when in the latter Seaſon the deciduous Trees do not appear ſo agreeable: therefore, if the Borders of Wilderneſs-quarters are ſkirted with Ever-green, they will have a good Effect.

4. The Walks muſt alſo be proportion'd to the Size of the Ground, and not make large Walks in a ſmall Wilderneſs (nor too many Walks, though ſmaller), whereby the greateſt Part of the Ground is employ'd in Walks: nor ſhould the grand Walks of a large Wilderneſs be too ſmall, both of which are equally faulty. Theſe Walks ſhould not be enter'd immediately from thoſe of the Pleaſure-garden; but rather be led into by a ſmall private Walk, which will render it more entertaining: or if the large Walk be turned in Form of a Serpent, ſo as not to ſhew its whole Extent, the Mind will be better pleas'd, than if the Whole were open to the Vew.

The uſual Method of contriving Wilderneſſes is, to divide the whole Compaſs of Ground, either into Squares, Angles, Circles, or other Figures, making the Walks correſpondent to them; planting the Sides of the Walks with Hedges of Lime, Elm, Hornbeam, &c. and the Quarters within are planted with various Kinds of Trees promiſcuouſly without Order. But this can by no means be eſteemed a judicious Method; becauſe hereby there will be a great Expence in keeping the Hedges of a large Wilderneſs in good Order, which, inſtead of being beautiful, are rather the reverſe; for as theſe Parts of a Garden ſhould, in a great meaſure, be deſign'd from Nature, ſo whatever has the ſtiff Appearance of Art does by no means correſpond therewith. Beſides, theſe Hedges are generally trained up ſo high, as to obſtruct the Sight from the Trees in the Quarters, which ought never to be done.

In the next place, the Walks are commonly made to interſect each other in Angles; which alſo ſhews too formal and trite for ſuch Plantations, and are by no means comparable to ſuch Walks as have the Appearance of Meanders or Labyrinths, where the Eye cannot diſcover more than twenty or thirty Yards in Length; and the more theſe Walks are turn'd, the greater Pleaſure they will afford. Theſe ſhould now-and-then lead into an open cirlar Piece of Graſs; in the Centre of which may be plac'd either an Obeliſk, Statue, or Fountain; and if in the middle Part of the Wilderneſſes there be contrived a large Opening, in the Centre of which may be erected a Dome or Banqueting-houſe, ſurrounded with a green Plot of Graſs, it will be a conſiderable Addition to the Beauty of the Place.

From the Sides of the Walks and Openings, the Trees ſhould riſe gradually one above another to the Middle of the Quarters, where ſhould always be planted the largeſt-growing Trees, ſo that the Heads of all the Trees will appear to the View;

but their Stems will be hid from Sight, which will have a vaſtly different Effect from the common Method, where the Trees are planted large and ſmall without any Order; ſo that many times the largeſt are next the Sight, and ſmall ones behind them, juſt according as it happens; in which manner the ſmall ones, being overhung and ſhaded, ſeldom thrive well.

But in order to plant a Wilderneſs with Judgment, the uſual Growth of all the different Sorts of Trees ſhould be well conſider'd, that each may be placed according to the Magnitude to which they generally grow; otherwiſe, if they are at firſt planted one above another, as before directed, they will not continue to grow in this Order many Years; for ſome Sorts will greatly outgrow the others, and thereby render the Plantation leſs beautiful; but when they are placed according to their uſual manner of growing, they will always continue nearly in the ſame Order, which renders them very entertaining to the Sight.

Theſe Trees ſhould alſo be allowed a proportionable Diſtance, according to their Growth, and not be crouded ſo cloſe as is commonly practiſed, whereby there are four times the Number of Trees planted which need be: and this cloſe Planting cauſes them to aſpire to a great Height; but then they want the noble Diffuſion of Branches, which is vaſtly more agreeable to the Sight, than a Parcel of thin, taper Stems, with ſcarcely any Heads, as is too often the Caſe in ſome of the largeſt Gardens in *England*, where, inſtead of looking at a noble Parabola of Trees, with their ſpreading globular Heads, a Parcel of naked Stems preſent themſelves to View; and where the Trees are thus crouded, they never thrive half ſo well, nor will they continue half ſo long, as thoſe which are allowed a proper Diſtance; for their Roots, running and interfering with each other, draw the Nouriſhment away faſter than the Ground can ſupply them; which cauſes their Leaves to be ſmall, and, in dry Seaſons, to decay, and fall off, long before their uſual time; and thereby renders the Plantation leſs agreeable.

In the Diſtribution of theſe Plantations, in thoſe Parts which are planted with deciduous Trees, may be planted next the Walks and Openings, Roſes, Honeyſuckles, Spiræa Frutex, and other Kinds of low-flowering Shrubs, which may be always kept very dwarf, and may be planted pretty cloſe together; and at the Foot of them, near the Sides of the Walks, may be planted Primroſes, Violets, Daffodils, and many other Sorts of Wood-flowers; not in a ſtrait Line, but rather to appear accidental, as in a natural Wood. Behind the firſt Row of Shrubs ſhould be planted Syringas, Cytiſus's, Althæa Frutex, Mezereons, and other flowering Shrubs of a middle Growth; which may be back'd with Laburnums, Lilacs, Gelder-roſes, and other flowering Shrubs of large Growth: theſe may be back'd with many other Sorts of Trees, riſing gradually to the Middle of the Quarters, from whence they ſhould always ſlope down every Way to the Walks.

By this Diſtribution you will have the Pleaſure of the flowering Shrubs near the Sight, whereby you will be regaled with their Scent, as you paſs through the Walks; which is ſeldom obſerved by thoſe who plant Wilderneſſes; for nothing is more common than to ſee Roſes, Honeyſuckles, and other ſmall flowering

Shrubs, placed in the Middle of large Quarters, under the Dropping and Shade of large Trees, where they ſeldom thrive; and if they do, the Pleaſure of them is loſt, becauſe they are ſecluded from the Sight. If theſe Quarters are ſlightly dug every Winter, it will keep the Ground clean from noxious Weeds, and be a great Benefit to the Trees. And the Expence of doing this, where Labour is cheap, cannot be very conſiderable, unleſs in very great Plantations.

But, beſide theſe grand Walks and Openings (which ſhould always be laid with Turf, and kept well mowed), there ſhould be ſome ſmaller Serpentine-walks through the Middle of the Quarters, where Perſons may retire for Privacy. There need be nothing but the Ground of the Place made level, and kept hoed, to clear it from Weeds, which will be no great Trouble to do with a *Dutch* Hoe; which is broad, and will make great Riddance; and then rake them over to make them handſome. Theſe Walks need not be very broad; but ſhould be turned in ſuch a manner, as not to deviate far from the Middle of the Quarter; becauſe there the Trees being largeſt, will afford the ampleſt Shade; ſix or ſeven Feet will be a ſufficient Width for theſe Walks, in large Quarters; but in ſmall ones, four Feet is full enough. By the Sides of theſe private Walks may alſo be ſcattered ſome Wood-flowers and Plants, which, if artfully planted, will have a very good Effect.

In the general Deſign for theſe Wilderneſſes, it ſhould not be ſtudied to make the ſeveral Parts correſpondent; for that is ſo formal and ſtiff, as to be now quite rejected: the greater Diverſity there is in the Diſtribution of theſe Parts, the more Pleaſure they will afford: and ſince, according to this Method of Deſigning and Planting, the different Parts never preſent themſelves to the ſame Views, it is no matter how different they are varied aſunder; that Part of them which is moſt in View from the Houſe, or other Parts of the Garden, may be planted with Evergreens; but the other Parts may be planted with deciduous Trees in the foregoing manner.

The Part planted with Evergreens may be diſpoſed in the following manner; *viz.* in the firſt Line, next the great Walks, may be placed Laurus-tinus, Boxes, Spurge-laurel, Juniper, Savin, and other dwarf Evergreens. Behind theſe may be placed Laurels, Hollies, Arbutus's, and other Ever-greens of a larger Growth. Next to theſe may be placed Alaternus's, Phyllirea's, Yews, Cypreſſes, *Virginian* Cedars, and other Trees of the ſame Growth; behind theſe may be planted *Norway* and Silver Firs, the True Pine, and other Sorts of the like Growth; and in the Middle ſhould be planted *Scotch* Pines, Pinaſter, and other of of the largeſt-growing Evergreens, which will afford a moſt delightful Proſpect, if the different Shades of their Greens are curiouſly intermixed. And in order to render the Variety greater, there may be many Kinds of hardy Ever-greens obtain'd from the North Parts of *America*; as there are already ſome in *England*, which are very fit for this Purpoſe, and are mention'd in different Parts of this Book.

This manner of ſeparating the Ever-greens from the deciduous Trees will not only make a much better Appearance, but alſo cauſe them to thrive far beyond what they uſually do when intermix'd; therefore I ſhould never adviſe any Perſon to plant them promiſcuouſly together.

By what I have ſaid concerning the Planting of the Trees in Rows, one behind another, according to their different Growths, I would not have it underſtood, that I mean the placing them in ſtrait Lines, which is too ſtiff and formal for theſe Plantations: all that is intended is, to place the front Rows of Trees on each Side the Walks, at an equal Diſtance from the Side of the Walks; ſo that the Lines of Trees (eſpecially the three firſt) will turn in the ſame manner as the Walks. Thoſe behind may be placed after the ſame manner, provided Care be taken to allow each ſufficient room to grow, and that there may appear no uneven Gaps in the Diſtance of their Heads; but that they may all riſe gradually, ſo as to form an handſome Slope.

In ſmall Gardens, where there is not room for theſe magnificent Wilderneſſes, there may be ſome riſing Clumps of Ever-greens, ſo deſigned as to make the Ground appear much larger than it is in Reality; and if in theſe there are ſome Serpentine-walks well contriv'd, it will greatly improve the Places, and deceive thoſe who are unacquainted with the Ground, as to its Size. Theſe Clumps or little Quarters of Ever-greens ſhould be placed juſt beyond the plain Opening of Graſs before the Houſe, where the Eye will be carried from the plain Surface of Graſs, to the regular Slope of Ever-greens, to the great Pleaſure of the Beholder; but if there is a diſtant Proſpect of the adjacent Country from the Houſe, then this ſhould not be obſtructed, but rather a larger Opening allowed for the View, bounded on each Side with theſe riſing Clumps, which may be extended to half the Compaſs of the Ground: and on the back Part from the Sight, may be planted the ſeveral Kinds of flowering Shrubs, according to their different Growths, which will ſtill add to the Variety. Theſe ſmall Quarters ſhould not be ſurrounded with Hedges, for the Reaſons before given for the larger Plantations; nor ſhould they be cut into Angles, or any other ſtudied Figures, but be deſigned rather in a rural manner; which is always preferable to the other, for theſe Kinds of Plantations.

In Wilderneſſes there is but little Trouble or Expence after their firſt planting, which is an Addition to their Value: the only Labour required, is to mow and roll the large Graſs-walks, and to keep the other Ground-walks free from Weeds. And in the Quarters, if the Weeds are hoed down two or three times in a Summer, it will ſtill add to their Neatneſs. The Trees ſhould alſo be pruned to cut out all dead Wood, or irregular Branches, where they croſs each other, and juſt to preſerve them within due Bounds; and, as was before obſerv'd, if the Ground be ſlightly dug between the Trees, it will greatly promote their Vigour. This being the whole Labour of a Wilderneſs, 'tis no Wonder they are ſo generally eſteem'd, eſpecially when we conſider the Pleaſure they afford.

SWEET WILLIAMS. *Vide* Caryophyllus Barbatus.

WILLOW. *Vide* Salix.

WILLOW, the *French*. *Vide* Epilobium.

WINE.

Having given Directions for planting and managing of Vineyards in *England*, under the Article *Vitis*; it will be neceſſary under this Article, to give ſome Directions for the making of Wines; in doing of which, I ſhall briefly inſert what has been found the moſt beneficial Method, of any yet practiſed in this Country: for as our Climate wants the Aſſiſtance of the Sun, to ripen the Grapes properly for this Purpoſe; ſo the Practice of the *Vignerons* abroad will be found very deficient in *England*; tho' there are many things practiſed by thoſe of *France*, which are very worthy of the Notice of thoſe who are deſirous to make Wine in *England*.

I have before mention'd, that young Vines never produce ſo good Wine as thoſe which are twenty or thirty Years old; ſo that it cannot be expected, that thoſe Vineyards which are ſo young, as thoſe which have been planted lately in *England*, ſhould produce ſo good Wine, as they might do when grown to a greater Age; and eſpecially thoſe which have been planted upon rich Garden-ground near *London*, where they have generally been ſituated on a flat level Ground, and frequently in low moiſt Land. Under theſe Diſadvantages, together with a Want of Skill, not only in the Planting and Management of the Vines, but alſo in the Method of making the Wine; in which laſt, moſt of thoſe who have attempted to make Wine in *England*, have been extremely ignorant; therefore, from their Succeſs, there cannot be any tolerable Judgment formed of the Practicability of this Scheme. Indeed, the Seaſons of late have not been very favourable to this Project; but one or two cold Years ſhould not diſcourage People from attempting this; ſince it is often the Caſe in thoſe Countries where the Wines of higheſt Price are made: for the Summers there are often cold and moiſt; ſo that the Grapes do not arrive to a proper Maturity: in which Caſe the *Vignerons* have recourſe to Art, to aſſiſt and help their Vines, in the time of their Vintage; and it has been chiefly owing to the Want of this Skill, that the Wines made in *England* have failed.

In thoſe Countries where there is not Heat enough to ripen the Grapes perfectly well, or in bad Seaſons, when the Grapes do not come to Maturity, the Juice is always watry and poor, therefore greatly diſpos'd to Fermentation; and where there is not Art uſed to ſtop the Fermentation at a proper time, the Wine will turn eager; after which it is impoſſible to retrieve it, ſo as to render it good: altho' by mixing and brewing of this weak eager Wine with ſome of the ſtrong foreign Wines, there may be a Liquor compounded for Sale, yet this can never be ſo pure, or wholſome, as a Wine which is made without ſuch Art: yet that this has been practis'd by ſome of the Dealers in Wine, has been poſitively affirmed by the Perſons who have ſold them the *Engliſh* Juice; ſo that, in ſome Years, there has been a great Quantity of the Juice of *Engliſh* Grapes ſold, which has been uſed in the brewing and mixing of Wine for Sale, by thoſe who have Art enough to render it palatable. Therefore, if the Produce of the *Engliſh* Vineyards can, by being help'd with the Wines of other Countries, be render'd drinkable; if a Method can be found to anſwer this, by properly manageing the *Engliſh* Juice, at the time of making the Wine; ſo as to add Strength to it, and prevent its turning eager by Fermentation; this Wine will be much better for keeping, and a wholſomer Liquor for drinking, than any which is ſo mixed and compounded; therefore it is worthy of the Attention of every Perſon, who is deſirous of Succeſs in the Propagation and Improvement of *Engliſh* Vineyards.

The firſt thing to be obſerv'd in the making of Wine in *England* (after the Grapes are as ripe as the Seaſon will admit) is that of gathering the Grapes in the middle of the Day, and in dry Weather, that they may have no external Moiſture on them; as alſo to be careful not to mix unripe Grapes with thoſe which are ripe; ſo that it will be the beſt Method, to gather only ſuch as are the ripeſt firſt, and make good Wine of theſe, leaving thoſe which are leſs ripe for another Gathering, which may make a Wine of leſs Value; rather than by endeavouring to increaſe the Quantity, by mixing the Whole together, and thereby render the Quality of it leſs delicate: and then the Grapes ſhould be pick'd off the Stalks; in the doing of which, all unripe Grapes, or ſuch as are rotten, ſhould be rejected; putting only ſuch into the Vat, as are ſound and ripe. When the Juice is preſs'd out, before any Fermentation is begun, Part of the Juice ſhould be put into one or two large Coppers (in proportion to the Quantity of Wine intended to be made); and this Juice ſhould be boiled until it is brought to the Conſiſtence of Honey: and this ſhould be added to the fermenting Juice left in the Vat; which will prevent it from fermenting too ſtrongly, ſo as to turn eager; and will give ſuch a Body to the Wine, as to render it fit for keeping, and make it a pleaſant wholſome Liquor; for by this boiling of the Juice before Fermentation, the Water only is evaporated, and the Spirit is preſerv'd; ſo that by diminiſhing the Quantity, the Quality of the Wine is greatly improv'd: this has been practiſed by an ingenious Perſon, who made the beſt Wine from the Juice of *Engliſh* Grapes, without any other Art or Mixture, than has been done by any other Perſon: in his firſt Trial he boiled all the Juice, but not to the Conſiſtence before-mention'd, only for a ſhort time to evaporate Part of the Water; but in this he did not ſucceed ſo well, as in the former way, the Juice not fermenting ſo well: however, that might be owing to the want of Heat in the Room, where the Wine was making; for if the Weather proves cold at the time of Vintage, there ſhould be Stoves contriv'd to warm the Air of the Room; which will be of great Uſe in promoting the Fermentation of the Wine.

In proportion to the Goodneſs of the Grapes, the Juice ſhould be more or leſs boiled; as alſo, according as the Wine may be deſired more or leſs ſtrong; for by boiling it to evaporate a greater Quantity of the Water, the remaining Juice will be the ſtronger and richer; as we find by the rich Wines of *Greece*; as alſo the Malmſey, and other rich ſweet Wines, which are all boiled before Fermentation; and theſe boiled Wines rarely ever alter; ſo that the longer they are kept, the better they grow: and as this is the Practice of thoſe Countries where there is ſufficient Heat for ripening of the Grapes, ſo in thoſe Countries where there is a Want of Sun, there is a greater Neceſſity for making uſe of this Help; and every Perſon of tolerable Judgment will, by a few Trials, be enabled to know, to a Certainty, the Length of Time which will be proper to boil the Juice, ſo as to to render the Wine perfectly good.

If at the time when the Wine is fermenting, the Weather ſhould prove cold, it will be neceſſary to exclude the outer Air from the Room; and alſo to make gentle Fires to prevent the cold Air from ſtopping the Fermentation, which is the Practice of the *Vignerons* upon the *Rhine*; whoſe Practice we ſhould imitate, ſince their Climate approaches the neareſt to ours, of any Wine Country.

But when the Wines have properly fermented, it requires Skill to know how to ſtop the Fermentation; for the *Engliſh* Wines do frequently ferment too much, whereby they become acid and poor: indeed by this Method of boiling a third Part of the Juice to the Conſiſtence before-mention'd, this is generally prevented. But if there ſhould be any Danger of their fermenting too violently, it may not be improper to add a ſmall Quantity of highly rectified Spirits, drawn from the Lees of the Wine, which is generally practiſed by the moſt ſkilful *Vignerons* abroad.

The Method of judging when Wine has fermented its proper time, is chiefly by the Taſte; but it depends in a great meaſure on the Perſon who directs this Affair having a good Palate, to know when the Wine is in Perfection; for in hot dry Years it will require a much greater Fermentation, and to be continued longer, than in moiſt cool Seaſons; and ſome particular Sorts of Grapes will take a longer time to ferment than others; ſo that it is by no means adviſeable to mix different Sorts of Grapes together in the Preſs, becauſe there are not any two Sorts but will require a different Degree of Fermentation; which will occaſion the Wine to be always on the Fret.

When the greateſt Fermentation is over, the Wine ſhould be drawn off into freſh Caſks, which muſt be filled within a very little of the Top; but the Bung-hole ſhould be left open three Weeks, or a Month, to give Vent to the generated Air; and as the Wine ſubſides in the Caſks, ſo they ſhould be carefully refilled with Wine of the ſame Sort from a Store-cask, which ſhould be provided for that Purpoſe; but this muſt be done with much Care, leſt by haſtily refilling the Casks, the Scum which is naturally produc'd upon all new Wines, ſhould be broken thereby, which will mix with the Wine, and foul it, cauſing it to take an ill Taſte; therefore it would be proper to have a Funnel, which ſhould have a Plate at the ſmall End, bored full of little Holes, like the Noſſel of a Water-pot, that the Wine may paſs through in ſmall Drops, which will prevent its breaking of the Scum.

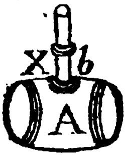
After the Wine has remained in this State a Month or ſix Weeks, it will be neceſſary to ſtop up the Bung-hole, leſt by expoſing it too much to the Air, the Wine ſhould grow flat, and loſe much of its Spirit and Strength; but it muſt not be quite ſtopped up, but rather ſhould have a Pewter or Tin-tube, of about half an Inch Bore, and two Feet long, placed in the Middle of the Bung-hole. The Uſe of this Tube is to let the Air, which is generated by the Fermentation of the Wine, paſs off, becauſe this, being of a rancid Nature, would ſpoil the Wine, if it were pent up in the Caſk; and in this Tube there may always remain ſome Wine, to keep the Cask full, as the Wine ſhall ſubſide; and, as it ſhall be neceſſary, the Wine in the Tube may be eaſily repleniſhed. For want of rightly underſtanding this Affair, a great Quantity of the choiceſt Wines of *Italy*, and other Countries, have been loſt. A great Complaint of this Misfortune I received from a very curious Gentleman in *Italy*, who ſays; “Such is the Nature of this Country Wines in general (nor are the choiceſt *Chianti's* excepted), that at two Seaſons of the Year, *viz.* the Beginning of *June* and *September*, the firſt when the Grapes are in Flower, and the other when they begin to ripen, ſome of the beſt Wines are apt to change (eſpecially at the latter Seaſon); not that they turn eager, but take a moſt unpleaſant Taſte, like that of a rotten Vine-leaf, which renders them not only unfit for drinking, but alſo to make Vinegar of; and is called the *Settembrine*. And what is moſt ſtrange is, that one Caſk, drawn out of the ſame Vat, ſhall be infected, and another remain perfectly good, and yet both have been kept in the ſame Cellar.

“As this Change happens not to Wine in Flaſks (though that will turn eager), I am apt to attribute it to ſome Fault in refilling the Caſk, which muſt always be kept full; which, either by letting alone too long, till the Decreaſe be too great, and the Scum there naturally is on all Wines thereby being too much dilated, is ſubject to break; or elſe, being broken by refilling the Caſk, gives it that vile Taſte. But againſt this there is a very ſtrong Objection; *i. e.* that this Defect ſeizes the Wine only at a particular Seaſon; *viz.* *September*; over which if it gets, it will keep good many Years. So that the Caſe is worthy the Inquiry of Naturaliſts, ſince it is evident, that moſt Wines are more or leſs affected with this Diſtemper, during the firſt Year after making.”

Upon receiving this Information from *Italy*, I conſulted the Reverend Dr. *Hales* of *Teddington*, who was then making many Experiments on fermenting Liquors; and received from him the following curious Solution of the Cauſe of this Change in Wine, which I ſent over to my Friend in *Italy*, who has tried the Experiment; and it has accordingly anſwered his Expectation, in preſerving the Wine, which was thus managed, perfectly good: he has alſo communicated the Experiment to ſeveral *Vignerons* in different Parts of *Italy*, who are repeating the ſame: which take in Dr. *Hales*'s Words.

“From many Experiments which I made the laſt Summer, I find that all fermented Liquors do generate Air in large Quantities, during the time of their Fermentation; for, from an Experiment made on twelve Cubic Inches of *Malaga* Raiſins, put into eighteen Cubic Inches of Water the Beginning of *March*, there were 411 Cubic Inches of Air generated by the Middle of *April*; but afterwards, when the Fermentation was over, it reſorbed a great Quantity of this Air. And from forty-two Cubic Inches of Ale from the Tun (which had fermented thirty-four Hours before it was put into the Bolt-head) had generated 639 Cubic Inches of Air, from the Beginning of *March* to the Middle of *June*, after which it reſorbed thirty-two Cubic Inches of Air: from whence it is plain, that fermented Liquors do generate Air, during the time of their Fermentation; but after-

"wards they are in an imbibing State; which may, perhaps, account for the Alteration of the nice *Italian* Wines; for Wine, during the firſt Year after making. continues fermenting more or leſs, during which time a great Quantity of Air is generated, until the Cold in *September* put a Stop to it; after which it is in an imbibeing State. For the Air thus generated is of a rancid Nature (as the *Grotto del Cano*), and will kill a living Animal, if put into it. So that if, during the Fermentation of the Wine, there are two Quarts of this rancid Air generated, which is cloſely pent up in the upper Part of the Veſſel, when the Cold ſhould ſtop the Fermentation, the Wine, by abſorbing this Air, becomes foul, and acquires this rancid Taſte; to prevent which, I would propoſe the following Experiment:



"Suppoſe the Veſſel A filled with Wine; in the Bunghole of this Veſſel b, I would have a Glaſs Tube of two Feet long, and about two Inches Bore, fixed with a Pewter Socket cloſely cemented, ſo as that there may be no Vacuities on the Sides; and into this Tube ſhould be another, of about half an Inch Bore, cloſely fixed; the lower Tube ſhould always be kept about half full of Wine, up to X, which will ſupply the Veſſel, as the Wine therein ſhall ſubſide, ſo that there will be no room left in the upper Part of the Veſſel to contain generated Air, which will paſs off through the upper ſmall Tube, which muſt be always left open for this Purpoſe; and the Tube being ſmall, there will be no Danger of letting in too much Air to the Wine.

"As the Wine in the lower Tube ſhall ſubſide, it may be re-filled by introducing a ſlender Funnel thro' the ſmall Tube, down to the Scum upon the Surface of the Wine in the larger Tube, ſo as to prevent its being broken by the Wine falling too violently upon it. This Experiment being tried with Glaſs Tubes, will give an Opportunity to obſerve what Impreſſion the different States of the Air have upon the Wine, by its riſing or falling in the Tubes; and if it ſucceeds, it may be afterwards done by wooden or metal Tubes, which will not be in Danger of breaking."

This curious Experiment, having ſucceeded where-ever it has yet been tried, will be of great Service in the Management of Wines, there being many uſeful Hints to be taken from it, particularly with regard to fermenting Wines; for ſince we find, that Wines too long fermented (eſpecially thoſe which are produced in cool Countries) do ſeldom keep well; ſo, by letting them ſtand in a cool Place, the Fermentation will be checked, which will render the Wine foul, and ſubject to turn eager: therefore great care ſhould be taken to keep the Wine in an equal Temperature of Air; which may be known by hanging a Thermometer in the Vault.

But after the Wine has paſſed its Fermentation in the Vat, and is drawn off into the Caſks, it will require ſomething to feed upon; ſo that you ſhould always preſerve a few Bunches of the beſt Grapes, which may be hung up in a Room for that Purpoſe, until there be Occaſion for them; when they ſhould be picked off the Stalks, and two or three good Handfuls put into each Caſk, according to their ſeveral Sizes: for want of this, many times People make uſe of other things, which are by no means ſo proper for this Purpoſe.

When the Wine has remained one Year upon the Lees, it is commonly drawn off into other Veſſels; but when this is done, it may not be improper to add a Quantity of dried Grapes, or Raiſins of the Sun, ſufficient for the Wine to feed upon; but great Care muſt be had, that the Quantity is not ſo great, as to raiſe a new Fermentation in the Wine, which will endanger its turning acid. About ſix or ſeven Pounds of theſe, clean picked from Stalks, will be ſufficient for one Hogſhead of Wine, and more may be prejudicial.

As the Wine will ſubſide in the Veſſels during its Continuance therein; ſo it is the uſual Method, to re-fill the Veſſels from time to time with ſome Wine, as nearly like the Sort as poſſible; for if it is of a different Nature from that in the Veſſels, or much newer, it will often excite a Fermentation, which will prove hurtful to the Wine: therefore, when there is wanting a Supply of proper Wine, it will be a good Method to fill up the Veſſel with ſmall Pebbles cleanly waſhed, which is what I have known practiſed with Succeſs.

WOODS and Groves are the greateſt Ornaments to a Country-ſeat; therefore every Seat is greatly defective without them; Wood and Water being abſolutely neceſſary to render a Place agreeable and pleaſant. Where there are Woods already grown to a large Size, ſo ſituated as to be taken into the Garden, or ſo nearly adjoining, as that an eaſy Communication may be made from the Garden to the Wood; they may be ſo contrived by cutting o winding Walks thro' them, as to render them the moſt delightful and pleaſant Parts of a Seat (eſpecially in the Heat of Summer), when thoſe Walks afford a goodly Shade from the ſcorching Heat of the Sun.

As I have already treated of the Uſe and Beauty of Wilderneſſes, and have given Directions for the making and planting of them; I ſhall not inlarge much upon that Head in this Place: therefore I ſhall only give ſome ſhort Inſtructions for the cutting and making of theſe Wood-walks in thoſe Places where Perſons are ſo happy as to have any grown Woods, ſo ſituated as to be near the Habitation, and are either taken into the Garden, or Walks made from the Houſe or Garden, leading to them; as alſo how to plant and decorate the Sides of theſe Walks with Shrubs and Flowers, ſo as to render them agreeable and pleaſant.

Where Perſons have the Convenience of grown Woods near the Habitation, ſo as that there may be an eaſy Communication from one to the other, there will be little Occaſion for Wilderneſſes in the Garden; ſince the natural Woods may be ſo contriv'd, as to render them much pleaſanter than any new Plantation can poſſibly arrive to within the Compaſs of twenty Years, where the Trees make the greateſt Progreſs in their Growth; and in ſuch Places where their Growth is ſlow, there cannot be expected Shade equal to the grown Woods, in double that Number of Years: but there is not only the Pleaſure of enjoying a preſent Shade from theſe Woods, but alſo a great Expence ſaved in the planting of Wilderneſſes; which, if they are large, and the Trees to be purchas'd, will amount to no ſmall Sum.

If the Wood is ſo ſituated, as that the Garden may be contriv'd between the Houſe and that, then the Walk into the Wood ſhould be made as near to the Houſe as poſſible; that there may not be too much open Space to walk thro' in order to get into the Shade: if the Wood is of ſmall Extent, then there will be a Neceſſity of twiſting of the Walks pretty much, ſo as to make as much Walking as the Compaſs of Ground will admit; but there ſhould be Care taken not to bring the Turns ſo near each other, as that the two Walks may be expoſed to each other, for want of a ſufficient Thickneſs of Wood between; but where the Wood is large, the Twiſts of the Walks ſhould not approach nearer to each other than ſixty or eight Feet; or in very large Woods double that Diſtance will be yet better; becauſe, when the Under-wood is cut down, which will be abſolutely neceſſary every tenth or twelfth Year, according to its Growth, then the Walks will be quite open, until the Under-wood grows up again, unleſs a Border of Shrubs, intermix'd with ſome Ever-greens, is planted by the Sides of the Walks; which is what I would recommend, as this will greatly add to the Pleaſure of theſe Walks.

Theſe Wood-walks ſhould not be leſs than eight or nine Feet broad in ſmall Woods; but in large ones fifteen Feet will not be too much: and on each Side of the Walks, the Border of Shrubs and Ever-greens may be nine or ten Feet broad; which may be ſo manag'd, as to ſhut out the View from one Part of the Walk to the other, at thoſe times when the Under-wood is cut down; at which times there will be an abſolute Occaſion for ſuch Plantations; and at all times they will afford great Pleaſure, by adding to the Variety, as alſo by their fragrant Odour.

The former Method which was practis'd in cutting of theſe Walks thro' Woods, was, to have them ſtrait as poſſible; ſo that there was much Trouble to make Sights thro' the Woods, for Direction how to cut them; but where this was practis'd, every Tree which ſtood in the Line, good and bad, was cut down; and many times boggy or bad Ground was taken into the Walks; ſo that an Expence of Draining and Levelling was neceſſary to render them proper for walking on: beſides this, there were many other Inconveniencies attending theſe ſtrait Cuts thro' Woods; as, firſt, by letting in a great Draught of Air, which in windy Weather renders the Walks unpleaſant; and then theſe Cuts will appear at a great Diſtance from the Woods, which will have a very bad Effect; therefore the modern Practice of twiſting the Walks thro' Woods is to be preferr'd. In the cutting of theſe Walks, there ſhould be particular Care taken to lead them over the ſmootheſt and ſoundeſt Part of the Ground; as alſo to avoid cutting down the good Trees; ſo that whenever theſe ſtand in the Way, it will be better to lead the Walk on one Side, than to have the Tree ſtand in the middle: for altho' ſome Perſons may contend for the Beauty of ſuch Trees which are left ſtanding in Walks; yet it muſt be allow'd, that unleſs the Walk is made much broader in thoſe Places than in the other, the Trees will occaſion Obſtructions to the Walkers, eſpecially when two or three Perſons are walking together: ſo that it will be much better to have the Walks intirely clear from Trees; and where any large-ſpreading

ing Tree ſtands near the Walk, to cut away the ſmall Wood, ſo as to make an Opening round the Trees, where there may be ſome Seats plac'd, for Perſons to reſt under the Shade: the Turns made in theſe Walks ſhould be as natural as poſſible; nor ſhould there be too many of them, for that will render the Walking thro' them diſagreeable; therefore the great Skill in making of theſe Walks is, to make the Turns ſo eaſy as not to appear like a Work of Art, nor to extend them ſtrait to ſo great Length, as that Perſons who may be walking at a great Diſtance, may be expoſed to the Sight of each other: both theſe Extremes ſhould be avoided as much as poſſible, ſince they are equally diſagreeable to Perſons of true Taſte. When a Wood is properly manag'd in this Way, and a few Places properly left like an open Grove, where there are ſome large Trees ſo ſituated as to form them, there can be no greater Ornament to a fine Seat, than ſuch a Wood.

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X E

XERANTHEMUM, Eternal Flower, or Ptarmica, *vulgo*.

The *Characters* are;

It hath a ſcaly ſilver-colour'd permanent Empalement: the Flower is dry; the Diſk conſiſting of many plain Petals, having no Embryoes affixed to them; yet are included in the ſame Empalement with the Florets, which reſt on the Embryoes, which afterward become Seeds, each bearing a leafy Head.

The *Species* are;

1. Xeranthemum *flore ſimplici purpureo majore. H. L.* Eternal Flower, or Ptarmica, with a large ſingle purple Flower.

2. Xeranthemum *flore pleno purpureo majore. H. L.* Eternal Flower, or Ptarmica, with a large double purple Flower.

3. Xeranthemum *flore ſimplici albo. H. L.* Eternal Flower, or Ptarmica, with a ſingle white Flower.

4. Xeranthemum *flore pleno albo. H. L.* Eternal Flower, or Ptarmica, with a double white Flower.

5. Xeranthemum *flore ſimplici purpureo minore. Tourn.* Eternal Flower, or Ptarmica, with a leſſer ſingle purple Flower.

6. Xeranthemum *flore purpureo ſimplici minimo, ſemine maximo. H. L.* Eternal Flower, or Ptarmica, with a very ſmall ſingle purple Flower, and a large Seed.

Theſe Flowers were formerly much more cultivated in the *Engliſh* Gardens than at preſent; eſpecially the two Sorts with double Flowers; which the Gardeners near *London* did cultivate in great Plenty for their Flowers, which they brought to Market in the Winter-ſeaſon, to ſet in Glaſſes in Rooms, to ſupply the Place of other Flowers, which are not eaſy to be procur'd at that Seaſon; for theſe, being gather'd when they are fully blown, and carefully dry'd, will continue freſh and beautiful many Months; but as there are no other Colours in theſe Flowers but White and Purple, the Gardeners had a Method of dipping them into various Tinctures, ſo as to have ſome of a fine Blue, others Scarlet, and ſome Red, which made a pretty Variety; and, if they were rightly ſtain'd, and afterwards hung up till they were thorough-dry, they would continue their Colours as long as the Flowers endured.

All theſe Sorts are propagated by Seeds, which ſhould be ſown in a warm Border in *Auguſt*; obſerving to water and ſhade the Ground, if the Seaſon proves warm and dry, until the Plants are come up; after which they muſt be kept clean from Weeds, and, in dry Weather, ſhould be now-and-then refreſh'd with Water. When the Plants are about two Inches high, they ſhould be prick'd out into another Border under a warm Wall, Pale, or Hedge, at about four or five Inches Diſtance from each other. In this Place the Plants will endure the Cold of our ordinary Winters extremely well; and in the Spring will require no farther Care, but to keep them clear from Weeds; for they may remain in the ſame Place for good. In *June* they will begin to flower, and the Beginning of *July* they will be fit to gather for drying: but a few of the beſt and moſt double Flowers of each Kind ſhould be ſuffer'd to remain for Seed; which, in about two Months time, will be ripe, and the Plants will periſh ſoon after; ſo that the Seeds muſt be annually ſown, in order to preſerve them.

The Seeds of theſe Plants are many times ſown in the Spring; but they ſeldom grow ſo well at that Seaſon; nor will the Plants grow near ſo large, or produce near the ſame Quantity of Flowers, as thoſe which are ſown in Autumn: for which Reaſons, that time ſhould be preferr'd. Beſides, it often happens, that the Plants which come up of the Spring-ſowing, rarely produce good Seeds, unleſs the Seaſon prove very favourable.

XIPHION, Bulbous Iris, or Flower-de-luce.

The *Characters* are;

It hath a Lily-flower, conſiſting of one Leaf, and ſhaped exactly like that of the common Iris: the Pointal is furniſhed with three Leaves; but the Empalement turns to a Fruit ſhaped like that of the common Iris: the Root is bulbous, or conſiſts of many Coats, in which it differs from the Iris.

The *Species* are;

1. XIPHION *Perſicum præcox, flore variegato. Tourn.* Early *Perſian* bulbous Flower-de-luce, with a variegated Flower.

2. XIPHION *anguſtifolium, flore albo, labio inferiori rictus aureo. Boerh. Ind.* Narrow-leav'd bulbous Iris, with a white Flower, and the lower Part of the Lip of a yellow Colour.

3. XIPHION *anguſtifolium, cæruleo-violaceum, non odorum. Boerh. Ind.* Common narrow-leav'd bulbous Iris, with a blue violet-colour'd Flower, without Scent.

4. XIPHION *anguſtifolium, flore luteo inodoro. Tourn.* Narrow-leav'd bulbous Iris, with a yellow Flower, without Scent.

5. XIPHION *anguſtifolium, flore ex violaceo-purpureo & cæruleo palleſcente, variegato, notata. Boerh. Ind.* Narrow-leav'd bulbous Iris, with a violet-purple and pale-blue variegated Flower.

6. XIPHION *anguſtifolium, petalis repandis albis, erectis dilute cæruleis, incumbentibus pallide cæruleſcentibus. Boer. Ind.* Narrow-leav'd bulbous Iris, whoſe Flower hath white Falls; the upright Leaves of a Sky-blue, and the under ones of a pale-bluiſh Colour.

7. XIPHION *anguſtifolium, petalis repandis aureis, incumbentibus pallide flavis, erectis dilute cæruleis. Boerh. Ind.* Narrow-leav'd bulbous Iris, whoſe Flower hath yellow Falls, and

the upright Leaves are of a ſky-blue Colour.

8. Xiphion *anguſtifolium, flore majore dilute cæruleo.* Narrow-leav'd bulbous Iris, with a large ſky-blue Flower.

9. Xiphion *anguſtifolium, flore majore dilute cæruleo, lineis rubris eleganter ſtriato.* Narrow-leav'd bulbous Iris, with a large ſky-blue Flower, elegantly ſtriped with Red.

10. Xiphion *anguſtifolium, flore majore albo.* Narrow-leav'd bulbous Iris, with a large white Flower.

11. Xiphion *anguſtifolium, flore majore albo, lineis dilute cæruleo, & pictis violaceo diſtincto.* Narrow-leav'd bulbous Iris, with a large white Flower, with ſky-blue Stripes, and ſpotted with Violet.

12. Xiphion *anguſtifolium, flore majore ſaturate violaceo.* Narrow-leav'd bulbous Iris, with a large deep violet-colour'd Flower.

13. Xiphion *anguſtifolium, flore majore, petalis repandis dilute cæruleis, erectis ſaturate violaceo.* Narrow-leav'd bulbous Iris, with a large Flower, whoſe Falls are of a Sky-blue, but the upright Petals are of a deep-violet Colour.

14. Xiphion *anguſtifolium, flore majore dilute cæruleo, petalis repandis flavis.* Narrow-leav'd bulbous Iris, with a large ſky-blue Flower, with yellow Falls.

15. Xiphion *anguſtifolium, flore majore ſaturatius violaceo, ſtriis rubris eleganter variegato.* Narrow-leav'd bulbous Iris, with a deep violet-colour'd Flower, beautifully ſtriped with Red.

16. Xiphion *anguſtifolium, flore majore, petalis repandis dilute cæruleo, erectis flavo.* Narrow-leav'd bulbous Iris, whoſe Flower hath pale-blue Falls, but the upright Leaves are of a yellow Colour.

There are many other Varieties of this Flower, which have been of late Years obtain'd from Seeds: their Numbers are every Year ſo much increas'd that way, that it would be endleſs to enumerate them all; therefore I ſhall proceed to their Culture; in which, I ſhall firſt begin with the Method of raiſing them from Seeds, that being the way to obtain new Varieties.

Having procured a Parcel of Seeds from good Flowers, the Beginning of *September*, you ſhould provide ſome flat Pans or Boxes, which muſt have Holes in their Bottoms to let the Moiſture paſs off; theſe ſhould be fill'd with freſh light ſandy Earth, and the Seeds ſown thereon pretty thick, obſerving to ſcatter them as equally as poſſible; then cover them over about half an Inch thick with the ſame freſh light Earth, and place the Boxes or Pans where they may have the morning Sun till Eleven o'Clock; and if the Seaſon ſhould prove very dry, they muſt be now-and-then refreſh'd with Water.

In this Situation they may remain until the Middle of *October*, when they ſhould be remov'd into a more open Poſition, where they may have the full Sun moſt Part of the Day; in which Place they muſt abide all the Winter, obſerving to keep them clear from Weeds and Moſs, which, at this Seaſon, are very apt to ſpread over the Surface of the Earth, in Pots, when they are expoſed to the open Air.

In the Spring the Plants will appear above-ground; when, if the Seaſon is dry, they muſt be now-and-then refreſh'd with Water, and conſtantly kept clear from Weeds; and as the Seaſon advances, and the Weather becomes warm, they ſhould be again remov'd into their former ſhady Situation, where they may enjoy the morning Sun only. When the Plants begin to decay (which will be in *June*), they muſt be cleared from Weeds, and dead Leaves, and ſome freſh Earth ſifted over them about half an Inch thick, ſtill ſuffering them to abide in the ſame Situation all the Summer-ſeaſon; during which time they will require no farther Care, but to keep them clear from Weeds, until the Beginning of *October*; when they muſt be again removed into the Sun, and the Surface of the Earth lightly taken off, and ſome freſh Earth ſifted over them.

In this Place they muſt remain all the Winter, as before; and in the Spring they muſt be treated as was directed for the former Year.

When the Leaves are decay'd, the Bulbs ſhould be carefully taken up (which may be beſt done by ſifting the Earth through a fine Sieve); and a Bed or two of good freſh light Earth ſhould be prepared, into which the Bulbs muſt be planted, at about three Inches aſunder each Way, and three Inches deep. Theſe Beds muſt be conſtantly kept clean from Weeds and Moſs; and in the Spring, juſt before the Plants come up, the Surface of the Beds ſhould be ſtirr'd, and ſome freſh Earth ſifted over them about half an Inch thick, which will greatly ſtrengthen the Roots.

During the Spring and Summer they muſt be conſtantly weeded; and at *Michaelmas* the Earth ſhould be again ſtirr'd, and ſome freſh ſifted over the Beds again, as before; obſerving in Winter and Spring ſtill to keep the Beds clean, which is the whole Management they will require; and in *June* following the greateſt Part of the Roots will flower; at which time you ſhould carefully look over them, and put down a Stick by all thoſe whoſe Flowers are beautiful, to mark them; and as ſoon as their Leaves are decay'd, theſe Roots may be taken up to plant in the Flower-garden amongſt other choice Sorts.

But the Nurſery-beds ſhould ſtill remain; obſerving to keep them clear from Weeds, as alſo to ſift freſh Earth over them, as was before directed; and the following Seaſon the remaining Part of the Roots, which did not flower the foregoing Seaſon, will now ſhew their Bloſſoms; ſo that you may know which of them are worth preſerving in the Flower-garden, which ſhould now be mark'd; and when their Leaves are decay'd, they muſt be taken up, and planted, with the other fine Sorts, in an Eaſt Border of freſh light Earth; but the ordinary Sorts may be intermix'd with other bulbous-rooted Flowers in the large Borders of the Pleaſure-garden, where, during the Continuance in Flower, they will afford an agreeable Variety.

But after theſe choice Flowers are obtain'd from Seeds, they may be increaſed by Off-ſets, as other bulbous Flowers are. Theſe Off-ſets ſhould be planted in a ſeparate Border from the blowing Roots, for one Year, until they have Strength enough to produce Flowers, when they may be placed in the Flower-garden with the old Roots.

Theſe Bulbs need not be taken up oftener than every other Year; which ſhould always be done ſoon after their Leaves decay, otherwiſe they will ſend forth freſh Fibres, when it will be too late to remove them: nor ſhould they be kept long out of the Ground; a Week or a Fortnight is full enough; for when they are kept longer, their Bulbs are ſubject to ſhrink, which cauſes their Flowers to be weak the following Year.

The Earth which the Flowers thrive beſt in, is a light ſandy Loam; and if it be taken from a Paſture-ground, with the Sward, and laid in an Heap until the Graſs is throughly rotted, it will be ſtill better; for theſe Bulbs do not delight in a rich dunged Soil: nor ſhould they be planted in a Situation where they may be too much expoſed to the Sun; for in ſuch Places their Flowers will continue but a few Days in Beauty, and their Roots are apt to decay; but in an Eaſt Border, where they have the Sun until Eleven of the Clock, they will thrive and flower extremely well, eſpecially if the Soil be neither too wet, nor overdry. From the moſt beautiful of theſe Flowers ſhould Seeds be ſaved, and ſown every Year; which will always furniſh new Varieties, ſome of which will greatly exceed the original Kinds.

The *Perſian* Iris is greatly eſteemed for the Beauty and extreme Sweetneſs of its Flowers, as alſo for its early Appearance in the Spring, it generally being in Perfection in *February*, or the Beginning of *March*, according to the Forwardneſs of the Seaſon, at which time there are few other Plants in Beauty.

This may be propagated by Seeds, in the ſame manner as the other Sorts; but the Boxes in which they are ſown, ſhould be put under a Garden-frame in Winter, to ſhelter them from hard Froſt; becauſe, while the Plants are young, they are ſomewhat tender. From the Seeds of this Kind I could never obtain any Varieties, their Flowers being always the ſame.

Theſe Plants are alſo propagated by Off-ſets, in the ſame manner as the other Sorts; but their Roots ſhould not be tranſplanted oftener than every third Year: nor ſhould they be ever kept out of the Ground long; becauſe their Roots will intirely decay in a ſhort time, ſo as not to be recover'd again. This Sort was formerly more common in the Gardens near *London* than at preſent; which, I ſuppoſe, has been occaſion'd by the keeping the Roots above-ground too long, which deſtroyed them.

XYLON, The Cotton Plant.

The *Characters* are;

The Flower conſiſts of one Leaf, cut into ſeveral Segments almoſt to the Bottom; and is of the expanded Bell-ſhape: from the Centre riſes an hollow pyramidal Tube, adorned and loaded, for the moſt part, with Chives: from the Empalement ſhoots up the Pointal, fixed like a Nail in the Bottom of the Flower, and out of the Tube; which is afterward changed into a roundiſh Fruit, divided into four or more ſeminal Cells, gaping at the Top, and incloſing Seeds cover'd over with, and wrapped within, that ſoft ductile Wool, commonly known by the Name of Cotton.

The *Species* are;

1. Xylon, *ſive Goſſypium herbaceum. J.B.* Herb or Shrubby Cotton.
2. Xylon *Americanum præſtantiſſimum, ſemine vireſcente. Ligon.* The moſt excellent *American* Cotton, with a greeniſh Seed.
3. Xylon, *ſive Goſſypium fruteſcens annuum, folio vitis ampliori quinqueſido, Inſulæ Providentiæ. Pluk. Phyt.* Annual ſhrubby Cotton of the Iſland of *Providence*, with a large quinqueſid Vine leaf
4. Xylon *arboreum. J. B.* The Tree-cotton.
5. Xylon *arboreum, flore flavo. Tourn.* Tree-cotton, with a yellow Flower.

There are ſeveral other Varieties of this Plant in the warm Parts of the *Eaſt* and *Weſt-Indies*, where they grow in great Plenty; ſome of which have been obſerved by the Curious in Botany; but others have eſcaped their Notice: however, theſe being what I have obſerved growing in the *European* Gardens, I ſhall not trouble the Reader with an Enumeration of the other Varieties.

The firſt Sort here mention'd is cultivated plentifully in *Candia*, *Lemnos*, *Cyprus*, *Malta*, *Sicily*, and at *Naples*; as alſo between *Jeruſalem* and *Damaſcus*, from whence the Cotton is brought annually into theſe Northern Parts of *Europe*. It is ſown upon tilled Grounds in the Spring of the Year, and cut down, and reaped, in Harveſt, as Corn with us. The Ground muſt be tilled and ſown again the ſucceeding Year, and manag'd in ſuch ſort, as we do the Tillage for Corn, and other Grain. It is an annual Plant, periſhing when it hath perfected its Fruit.

This Cotton is the Wool which incloſes or wraps up the Seeds, and is contained in a kind of brown Huſk or Seed-veſſel, growing upon this Shrub; for it is from this Sort that the vaſt Quantities of Cotton are taken, which furniſh our Parts of the World: it is brought from the Iſlands, where the Natives take great Care of its Culture. There are ſeveral Sorts of Cotton ſold, which chiefly differ according to the Countries from whence they come, and the various Preparations made of them: the firſt is the Cotton in the Wool; that is to ſay, that which comes from the Shell, from which only we take the Seed: theſe Cottons come from *Cyprus*, *Smyrna*, &c. The ſecond is the Cotton in the Yarn, which comes from *Damaſcus*. The *Jeruſalem* Cottons, which are called *Bazacs*, and are the beſt which are ſold. The ſecond and third Sorts are alſo annual: theſe are cultivated in the *Weſt-Indies* in great Plenty. But the fourth and fifth Sorts grow in *Egypt*; theſe abide many Years, and often arrive to be Trees of great Magnitude, from which the Inhabitants are annually furniſhed with great Quantities of Cotton. One of theſe Trees has a purpliſh, and the other a yellow Flower; which, I believe, is the only Difference between them.

The firſt Sort, which is what the Inhabitants of the *Greek* Iſlands cultivate, produces ſmall Pods, which contain but a ſmall Quantity of Cotton; therefore is not ſo well worth cultivating as ſome of the other Sorts; nor is the Staple of it ſo fine. The Sort which produces the largeſt Heads, and the fineſt Cotton, of any I have yet ſeen, is the ſecond Sort; but the Cotton of this ſo cloſely adheres to the Seeds, as to render it very difficult to ſeparate them from it; which has occaſion'd the Inhabitants of *America* ſo much Trouble, as to make them inclinable to give up the Culture of this Sort; but could a Gin be invented, whereby the Seeds could be readily taken out, this Sort of Cotton might become a very beneficial Plant to the Inhabitants of *Carolina*.

There are ſome other Kinds of Cotton in the *Eaſt-Indies*, which might be introduced into the *Britiſh* Colonies in *America*, where they would thrive as well as in their native Soil, and be a national Advantage; for the Cottons produced in *India* bear a much greater Price than either the *Levant* or *American* Cottons, the Staple being much finer: and ſince the Manufacture of Cottons is at preſent in great Repute in *England*, and the Wear of them become general; ſo, if this Country

try can be ſupplied with the beſt Sort in Plenty from the *American* Colonies, it would be of great Benefit to thoſe Places; and it might be afforded at a much cheaper Rate, than is now paid for it.

The Seeds of two of the *India* Cottons have been very lately brought to *England*; and the Plants, which have been produced from them, have a very different Appearance from any of thoſe Sorts which were before known here; but as they have not as yet produced either Flower or Fruit, I cannot ſay any thing of their Worth.

All theſe Sorts are preſerved in the Gardens of thoſe who are curious in collecting rare Plants: they are eaſily raiſed from Seeds (which may be obtain'd freſh from the Places of their Growth): theſe muſt be ſown upon an Hot-bed early in the Spring; and when the Plants come up, they muſt be tranſplanted out each into a ſeparate ſmall Pot fill'd with freſh light Earth, and plung'd into a moderate Hot-bed of Tanners Bark, obſerving to water and ſhade them until they have taken Root; after which they ſhould have Air and Water in proportion to the Warmth of the Seaſon, and the Heat of the Bed in which they are placed: for if they are too much drawn, by keeping the Glaſſes cloſe down in the Day-time, they will run up very weak and ſlender, ſo as not to be able to ſupport themſelves; and if they are too much expos'd to the Air, they will not make any Progreſs in their Growth.

When the Plants are ſo far advanced, as to fill the Pots with their Roots, they ſhould be ſhaken out, and put into larger Pots; which ſhould be fill'd with the ſame freſh light Earth, and again plung'd into the Hot-bed, and managed as before. Thus, from time to time, as the Plants advance, the muſt be removed into larger Pots; and as the Warmth of the Seaſon increaſes, they ſhould have a greater Share of Air; and when they are too tall to continue under the Glaſſes of the Hot-bed-frame, they muſt be removed into the Stove, and placed in the Tan-bed, amongſt other tender Exotic Trees and Shrubs; in which Place the annual Sorts will produce their Flowers in Autumn; but they rarely produce Pods in this Country.

The ſecond Sort has more generally ripen'd in *England* than the other; and the Seeds which have been ripened here, have always ſucceeded better, than thoſe which have been obtained from abroad.

The Tree-kinds muſt be continued in this Bark-ſtove all the Winter; and if they are placed with the All-ſpice, Sea-ſide Grape, and ſuch other *Weſt-Indian* Trees, obſerving to keep the Air of the Houſe about ten Degrees above the temperate Heat mark'd on the Botanical Thermometers, they will thrive very well, provided they are often refreſh'd with Water.

XYLON ARBOREUM. *Vide* Ceiba.

XYLOSTEON, Upright Honeyſuckle.

The *Characters* are;

The Flower conſiſts of one Leaf, is tubulous, and divided into ſeveral Parts at the Top, and reſts on the Empalement; theſe are for the moſt part produced by Pairs on the ſame Footſtalk: The Empalement afterward becomes a ſoft double Fruit or Berry, incloſing compreſſed roundiſh Seeds.

There is but one *Species* of this Plant at preſent known; *viz.*

Xylosteon *Pyrenaicum. Inſt. R. H. Pyrenean* Upright Honeyſuckle.

This Plant grows wild on the *Pyrenean* Mountains, and is ſeparated from the *Chamæceraſus*, by Dr. *Tournefort* on account of the Shape of its Flower, which differs ſo little from the Flowers of theſe Plants, that it doth not deſerve to be removed from them; ſince the Fruit agrees perfectly with thoſe of that Genus.

It grows about three or four Feet high, and divides into many Branches, after the ſame manner as the other Upright Honeyſuckles; the Flowers are ſmall, and come out but ſparſedly on the Branches, ſo do not make any great Appearance. The uſual Time of its flowering is in *February*, about the ſame time as the *Mezereon*; wherefore it may be admitted to have a Place in Gardens, amongſt other hardy Exotic Shrubs, in order to make a Variety. This Plant may be propagated by Cuttings, which ſhould be planted at *Michaelmas* on a ſhady Border, and in a ſtrong loamy Soil; where, if they are duly watered in dry Weather, and kept clear from Weeds, they will make good Roots by the following *Michaelmas*, when they may be removed to the Places where they are deſign'd to remain, which ſhould be in a ſtrong loamy Soil, and in a cool ſhady Situation. For if theſe Plants are planted on a light dry Soil, and in an open Situation, they will not live through one Summer, unleſs they are plentifully watered in dry Weather; and, even with this Care, they will make but little Progreſs.

* * *

Y E

YEW-tree. *Vide* Taxus.

Y U

YUCCA, The *Indian* Yucca, *vulgo*.

The *Characters* are;

It hath the Appearance of an Aloe, the Leaves ending in a ſharp Point, but will grow in the Habit of a Tree: the Flower conſiſts of one Leaf, which is bell-ſhaped, cut into ſix Segments, and naked: theſe are produc'd on long Spikes: the Ovary, which is in the Centre of the Flower, afterward becomes a tricapſular Fruit, as in the Aloe.

The *Species* are;

1. Yucca *folis aloes*. *C.B.P.* The common Yucca.

2. Yucca *foliis filamentoſis*. *Moriſ.* Yucca with Threads growing from the Leaves.

3. Yucca *Caroliniana arboreſcens anguſtifolia, marginibus vix ſerratis.* The narrow-leav'd *Carolina* Yucca, with Leaves ſcarcely ſerrated on the Edges.

The firſt of theſe Plants is pretty hardy, and, when grown ſtrong, will endure the Cold of our ordinary Winters in the open Air very well; provided it be planted in a dry Soil. This Sort ſeldom riſes with a Stem above three Feet high, which is garniſh'd with Leaves almoſt to the Ground. The Leaves of this are broad, and of a dark-green Colour, ending in a ſharp black Spine. This Sort frequently produces its Spikes of Flowers, which grow very ſparſedly on the Stalks, and the Spike of this Sort branches out on every Side to a conſiderable Diſtance; which renders it leſs beautiful than the Flowers of the other Kinds.

The third Sort is not ſo hardy as the two other, ſo muſt be houſed in Winter; for they will not live thro' the Winter in the open Air. This Sort will riſe with a Stem five or ſix Feet high; the Leaves are narrower, ſtiffer, and of a paler Green, than are thoſe of the Common Sort. The Flowers are of a fine purpliſh Colour on their Outſide, and a clear White within; which are produc'd in a long, cloſe Spike, and make a very beautiful Appearance; but theſe do not flower oftener than once in four or five Years, which is always in Autumn; ſo that they never produce any Seeds in this Country.

The threaded Sort is not ſo common as the others in the *Engliſh* Gardens; but as it is a Native of *Virginia*, it might eaſily be procured in Plenty from thence. The *Carolina* Sort hath been raiſed of late Years from Seeds which came from thence, and is now pretty common in *England*.

All theſe Plants are either propagated by Seeds, when obtain'd from Abroad; or elſe from Off-ſets or Heads taken from the old Plants, after the manner of Aloes.

When they are raiſed from Seeds, they ſhould be ſown in Pots fill'd with freſh light Earth, and plunged into a moderate Hot-bed, where the Plants will come up in five or ſix Weeks after; and when they are two or three Inches high, they ſhould be tranſplanted each into a ſeparate ſmall Pot filled with freſh light Earth, and plung'd into the Hot-bed; where the Plants ſhould have Air and Water in proportion to the Warmth of the Seaſon, and the Bed wherein they are plac'd.

In *July* they ſhould be enured, by degrees, to bear the open Air; into which they muſt be remov'd, to harden them before Winter; placing them in a well-ſhelter'd Situation, where they may remain until the Beginning of *October*, when they muſt be removed into the Green-houſe, where they may be ranged amongſt the hardier Sorts of Aloes, and ſhould be treated in the ſame manner as hath been already directed for them; to which the Reader is deſired to turn, for further Inſtructions.

When theſe Plants have acquired Strength, thoſe of the common Sort may be afterward turned out into a warm Border, where they will endure the Cold of our ordinary Winters very well; but the other Sorts muſt be kept in Pots, that they may be ſhelter'd in Winter; and if they are treated in the ſame way as the large *American* Aloe, they will do very well.

The Off-ſets taken from the old Plants ſhould be laid in a dry Place, for a Week or ten Days, before they are planted, that their Wounds may heal; otherwiſe they will be ſubject to rot with Moiſture.

As the ſecond and third Sorts do not put out Off-ſets ſo plentifully as the firſt, ſo, in order to propagate them, the Heads of the Plants may be cut off in *June*; and after having laid the wounded Part to dry, the Heads may be planted, which will ſoon take Root, provided the Pots are plunged into a moderate Hot-bed; and this cutting off the Heads will occaſion the Stems to put out Suckers, which they ſeldom do without; ſo that, by this Method, the Plants may be obtain'd in Plenty.

Z A

ZACINTHA, Warted Succory.

The *Characters* are;

It hath a floſculous Flower, conſiſting of many Half-florets, conſtantly reſting on the Embryoes, and included in a ſcaly Empalement: the Empalement afterward becomes a furrowed

Head, whoſe ſingle Parts, or Capſulæ, *have ſwelling Seeds, which are chanell'd.*

We have but one *Species* of this Plant; *viz.*

Zacintha *ſive cichorium verrucarium. Matth.* Warted Succory.

This Plant grows abundantly in the Iſland of *Zant*, from whence it obtained the Name; it alſo grows wild in ſeveral other warm Countries: but in *England* it is preſerved in the Gardens of ſome Perſons who are curious in Botany, for the ſake of Variety; there being little Beauty or Uſe at preſent known in this Plant.

It is an annual Plant, which periſhes ſoon after the Seeds are ripe; therefore muſt be ſown every Year, or the Seeds permitted to ſcatter on the Ground in Autumn, which will come up in the Spring, and furniſh a Supply of Plants more certainly than when the Seeds are ſown in that Seaſon; for the Seeds which are ſown in the Spring, will remain in the Ground a whole Year before the Plants come up; and ſometimes they intirely miſcarry; whereas thoſe Seeds which ſcatter in Autumn, or are ſown at the ſame Seaſon, rarely fail. When the Plants are come up, they will require no other Care, but to thin them where they are too cloſe, ſo as to leave them about ſix or eight Inches aſunder; and after this to keep them clear from Weeds. In *June* theſe Plants will begin to flower, and their Seeds will ripen about the End of *Auguſt*, or the Beginning of *September*.

The Flowers of this Plant are ſmall, and generally produced ſingly from the Divarications of the Branches, ſomewhat after the manner of Succory; the Flowers are of a yellow Colour, and reſemble thoſe of Hawkweed. After the Flowers are paſt, the Empalement ſwells to a furrowed Head, ſomewhat reſembling Warts or Excreſcences, in which the Seeds are included.

When the Seeds of this Plant are ſown in the Spring, it ſhould be done in Drills made about two Feet aſunder; and when the Plants are come up, they ſhould be thinned to the Diſtance of ſix Inches in the Rows; becauſe they do not thrive very well when they are tranſplanted, ſo that they ſhould remain in the Places where they are ſown; and if they are kept clear from Weeds, they will require no other Care.

ZANTHOXYLUM, The Pellitory, or Tooth-ach-tree.

The *Characters* are;

The Empalement of the Flower is of one Leaf, divided into five Parts at the Top: the Flower is compoſed of five Petals, having a Pointal in the Centre, which is attended by five Stamina: *the Pointal afterward becomes a roundiſh compreſſed Fruit, divided into four Cells, in each of which is one roundiſh hard ſhining Seed.*

We know but one *Species* of this Genus; *viz.*

Zanthoxylum *ſpinoſum, lentiſci longioribus foliis, euonymi fructu capſulari, ex inſula Jamaicenſi. Pluk. Phyt.* Pellitory, or Tooth-ach-tree.

This Plant grows on the Sea-coaſts of *Virginia* and *Carolina*; but in the latter it is much more plentiful than in the former; and it grows larger in *South Carolina*, than in the Northern Parts of *America*. The uſual Height of this in *Carolina* is about eighteen or twenty Feet; the Stem is woody, but not very hard; the Bark of the large Stems is cloſely beſet with pointed Protuberances, ſome of which are as large as Walnuts; ſo that the whole Stem has the Appearance of a ragged Staff; which has occaſion'd its being

ing called *Hercules*'s Club, by ſome of the Inhabitants of *America*. The young Stems, as alſo the Branches, are armed with ſharp Thorns. Toward the Top of the Stem, the Leaves are produced without Order. Theſe have long Footſtalks, garniſhed with three, four, or five Pair of *Pinnæ*, terminated by an odd Lobe: theſe are oblong, and end in a ſharp Point. Between the Leaves, the Flowers are produc'd in looſe Panicles, which are white, having red Summits in the Middle. Theſe Flowers are ſucceeded by round Capſules, each being divided into four Cells, containing ſo many ſhineing black Seeds. The Leaves, when bruiſed, ſmell like thoſe of the Orange-tree; the Bark and Seeds have a ſtrong aromatic Scent, and are very pungent to the Taſte. Theſe are frequently uſed by the Inhabitants of the Country to cure the Tooth-ach; from whence the Plant had the Name applied to it.

This Plant is propagated by Seeds, which muſt be procured from the Places of its natural Growth; for it doth not produce Seeds in *England*. Theſe Seeds muſt be ſown in Pots filled with light Earth, and plunged into a moderate Hot-bed; where, ſometimes, the Seeds will come up in ſix or eight Weeks time; but it often remains in the Ground a whole Year: ſo that if the Plants ſhould not appear the firſt Seaſon, the Pots ſhould be ſhelter'd in the Winter, and, early the following Spring, plunged into a freſh Hot-bed; which will bring up the Plants, if the Seeds are good. When the Plants are four or five Inches high, they ſhould be enured to the open Air by degrees; and they may be removed abroad in *June*, where they may remain till *October*; at which time the Pots ſhould be placed under a Frame, to be ſcreened from hard Froſt; but they muſt have free Air in mild Weather.

Theſe Plants ſhould remain in the Seed-pots until the following Spring, when they ſhould be tranſplanted each into a ſeparate ſmall Pot; and if they are then plunged into a moderate Hot-bed, it will greatly promote their Growth; but they ſhould be harden'd again to the open Air, and placed abroad in Summer, in a ſhelter'd Situation; and in Winter they muſt be again placed under a Frame, and ſo treated for two or three Years, till the Plants have obtain'd Strength; then, in the Spring of the Year, ſome of the Plants may be ſhaken out of the Pots, preſerving a Ball of Earth to their Roots, and planted in the full Ground, on a ſhelter'd Situation, where they will live through the ordinary Winters without Shelter; but as they are ſometimes deſtroyed by hard Froſt, it will be proper to keep ſome Plants in Pots, to be ſhelter'd in the Winter, to preſerve the Kind.

Theſe Plants ſhed their Leaves in Winter, and the Leaves ſeldom come out till *April* following. They delight in a looſe rich Soil, not too wet, nor very dry: in the one, they are often kill'd by Moiſture in Winter; and in the other, they frequently die in Summer, unleſs they are duly watered.

ZINZIBER, Ginger.

The *Characters* are;

The Flower (for the moſt part) conſiſts of five Leaves, which are ſhaped ſomewhat like thoſe of the Iris: theſe are produced in an Head or Club, each coming out of a ſeparate leafy Scale: the Ovary afterward becomes a triangular Fruit having three Cells, which contain the Seeds.

The *Species* are ;

1. Zinziber. *C. B. P.* The common Ginger.

2. Zinziber *latifolium ſylveſtre. H. L.* Broad leav'd wild Ginger, or Zerumbeth.

The firſt of theſe Plants is cultivated in the warm Parts of the *Weſt-Indies* in great Plenty ; from whence we are annually furniſh'd with the dried Roots for Uſe. The ſecond Sort is moſt common in the *Eaſt-Indies*, though it grows wild in ſome Parts of the *Weſt-Indies*. There are ſmall Quantities of the Roots brought into *Europe* for medicinal Uſe ; but it is never uſed in Kitchens as the other.

Theſe Plants are preſerved as Curioſities in the Gardens of thoſe who delight in rare Plants. They are both propagated by parting of their Roots : the beſt time for which is in the Spring, before they begin to ſhoot ; when each large Shoot may be divided into ſeveral Parts; obſerving always to preſerve two or three Eyes to each Piece. Theſe ſhould be planted into Pots filled with rich light Earth, and plunged into an Hot-bed of Tanners Bark, where they muſt be frequently refreſhed with Water : and in hot Weather the Glaſſes ſhould be raiſed with a Brick, to give them Air in proportion to the Warmth of the Seaſon, and the Heat of the Bed in which they are placed : for when their Leaves are come up, if they are too much drawn, they will grow very tall and weak, and the Roots will make but very indifferent Progreſs. But when they have a due Proportion of Heat, Moiſture, and free Air, their Roots will thrive ſo faſt, as, in one Seaſon, from a ſmall Head, to ſpread over a large Pot, and ſometimes will produce Flowers in this Country.

But theſe Plants muſt be conſtantly kept in an Hot-bed of Tanners Bark ; for they are too tender to endure the open Air in *England* in the warmeſt Part of Summer ; and in Winter they muſt be placed in a Bark-ſtove : for although their Leaves decay in Autumn, and their Roots ſeem to remain in an unactive State moſt Part of the Winter ; yet, if they are not preſerved in a very warm Place during that Seaſon, they will intirely rot ; as I have more than once obſerv'd. Nor do theſe Roots abide the Winter ſo well when placed upon Boards in the warmeſt Stove, as when they are plunged in the Bark-bed, though they are preſerved in the ſame Degree of Warmth : which I conceive to be owing to the Moiſture of the Bark, which, in Fermentation, aſcends, and entering the Holes at the Bottom of the Pots, affords an agreeable Nouriſhment to the Roots, preſerving them always plump and full ; whereas thoſe in a dry Stove often ſhrink for want of Moiſture, and ſo, many times, decay : for it is not very ſafe to give them much Water after their Leaves are decay'd ; becauſe they are very apt to rot with too much Moiſture at that Seaſon.

When the Leaves are decay'd, is the proper Time to take up theſe Roots ; but thoſe that are deſign'd to plant again, ſhould not be diſturb'd till the Spring, juſt before they begin to ſhoot ; which, as was before obſerv'd, is the beſt time to tranſplant them ; becauſe they ſoon after ſend forth their Fibres, which will preſerve them from rotting.

ZIZIPHORA.

The *Characters* are ;

The Flower hath a long rough cylindrical Empalement, which is ſlightly cut into five Parts at the Brim : the Flower is of the labiated Kind, having a long Tube : the Upper-lip is oval, erect, and bordered : the Under-lip

Lip (or Beard) is divided into three equal Segments: in the Centre is placed the ſquare Pointal, attended by two Stamina, *ſupporting oblong Summits: each Flower is ſucceeded by four angular Seeds.*

The *Species* are;

1. Ziziphora *foliis lanceolatis, floribus terminatricibus. Lin. Hort. Cliff.* Dwarf *Indian* Field-baſil.

2. Ziziphora *foliis lanceolatis, floribus lateralibus. Lin. Hort. Cliff.* Hairy Eaſtern Field-baſil, with Hyſſop-leaves.

Theſe are both annual Plants, of humble Growth: the firſt is a Native of the Northern Parts of *America:* the ſecond was diſcover'd by Dr. *Tournefort,* in the *Levant,* from whence he ſent the Seeds to the Royal Garden at *Paris.* Both theſe Plants have been ranged in the Genus of *Clinopodium,* by all the Botaniſts before Dr. *Linnæus;* who has ſeparated them, not only from that Genus, but alſo from their Claſs, on account of their Flowers having each but two *Stamina,* whereas the other Species have four. But as they have paſſed under the Title of *Clinopodium* ſo long, I have given them the *Engliſh* Name of Field-baſil, for want of one more proper.

The Seeds of theſe Plants may be ſown in a Border of light Earth, either in Spring or Autumn. Thoſe Plants which come up in the Autumn, will abide through the Winter, and will grow much larger than thoſe which come up in the Spring; though neither of them will riſe above ſix Inches high. The Seeds ſhould be ſown where the Plants are to remain; for they do not thrive well when they are tranſplanted, unleſs the Earth remains to their Roots. Theſe have a pretty ſtrong aromatic Scent, ſomewhat reſembling Summer-ſavory; but as they are Plants of little Beauty, they are ſeldom cultivated but in Botanic Gardens, for Variety-ſake.

The Seeds of thoſe Plants which come up in the Autumn, will be ripe in *July;* but thoſe of the Spring-plants will not ripen till the Latter-end of *Auguſt,* when, if the Seeds are permitted to ſcatter, the Plants will come up, and require no farther Care, but to clear them from Weeds, and thin them where they are too cloſe.

ZIZIPHUS, The Jujube.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which are placed circularly, and expand in form of a Roſe: out of whoſe Empalement riſes the Pointal, which afterward becomes an oblong fleſhy Fruit ſhaped like an Olive, including an hard Shell divided into two Cells, each containing an oblong Nut or Kernel.

The *Species* are;

1. Ziziphus. *Dod.* The common manured Jujube.

2. Ziziphus *ſylveſtris. Tourn.* The wild Jujube.

3. Ziziphus *quæ Jujube Americana ſpinoſa, loti arboris foliis & facie, fructu rotundo parvo dulci. Hort. Beaumont.* Prickly *American* Jujube, with Leaves like the Nettle-tree, and ſmall round ſweet Fruit commonly call'd, in the *Weſt-Indies,* Mangoſteen.

4. Ziziphus *argentea Zeylanica, ſpinis carens, Walæmbilla Zeylanenſibus dicta. C. B. P.* Silver-leav'd Jujube of *Ceylon,* without Spines, commonly called *Walæmbilla.*

The firſt of theſe Plants is cultivated in the Gardens of *Italy,* and the South Parts of *France,* from whence the Fruit was formerly brought into *England* for medicinal Uſe: but of late Years it has been very little uſed in the Shops, ſo that there is rarely any of it brought over at preſent.

In thoſe warm Countries they preſerve the Fruit for the Table in the Winter-ſeaſon, when few other Kinds are in Perfection; at which time theſe, and Services, and ſome other Sorts, furniſh their Deſſerts.

The Fruit is ſomewhat like a ſmall Plum; but has not a great Share of Fleſh upon the Stone; yet, having an agreeable Flavour, it is by ſome Perſons greatly eſteem'd.

The ſecond Sort grows wild in the Hedges in the South of *France*, *Italy*, and *Spain*; but in theſe colder Countries it is preſerv'd in the Gardens of thoſe who are curious in collecting the various Kinds of Trees and Shrubs.

Theſe Plants may be propagated by putting their Stones into Pots of freſh light Earth, ſoon after their Fruits are ripe; and in Winter they ſhould be placed under a common Hot-bed-frame, where they may be ſhelter'd from ſevere Froſt. In the Spring theſe Pots ſhould be plunged into a moderate Hot-bed, which will greatly facilitate the Growth of the Seeds; and when the Plants are come up, they ſhould be enured to the open Air by degrees, into which they muſt be remov'd in *June*, placing them near the Shelter of an Hedge; and in dry Weather they muſt be frequently refreſh'd with Water.

In this Situation they may remain until the Beginning of *October*, when they muſt be removed either into the Green-houſe, or placed under an Hot-bed-frame, where they may be defended from Froſt; but ſhould have as much free Air as poſſible in mild Weather.

During the Winter-ſeaſon they ſhould be now-and-then refreſh'd with Water; but after their Leaves are fallen (as they always ſhed them in Winter), they muſt not be over-watered; which would rot the tender Fibres of their Roots, and cauſe the Plants to decay.

In *March*, juſt before the Plants begin to ſhoot, they ſhould be tranſplanted, each into a ſeparate ſmall Pot fill'd with freſh light Earth; and if they are plunged into a moderate Hot-bed, it will greatly promote their taking Root; but in *May* they muſt be enured to the open Air by degrees, into which they ſhould be ſoon after removed.

Thus theſe Plants ſhould be manag'd while young, at which time they are tender; but when they are three or four Years old, they may be planted in the full Ground, where, if they have a dry Soil, and a warm Situation, they will endure the Cold of our ordinary Winters very well.

Theſe Plants may be alſo propagated by Suckers, which the old ones many times ſend forth from their Roots; but theſe are ſeldom ſo well rooted as thoſe produc'd from Seeds, or ſeldom make ſo good Plants; for which Reaſon they are but rarely propagated that way.

The third Sort is very common in *Barbados*, *Jamaica*, and the other warm Parts of *America*; from whence I have ſeveral times received the Seeds, which generally riſe very freely on an Hot-bed; but the Plants, being very tender, require the Help of a Bark-bed conſtantly, without which they will not make any Progreſs; and in Winter they muſt be placed in the Bark-ſtove, where, if they are frequently refreſhed with Water, they will thrive extremely well. There are ſeveral Plants of this Kind in the Gardens of the Curious; but I have not obſerved any to produce Flowers as yet.

The fourth Sort was brought into *England*, from ſome curious Garden in *Holland*, many Years ago. This was raiſed in the Gardens of Mynheer *Van Beaumont*, from the Seeds which he received from *Ceylon*, and ſince hath been communicated to many curious Perſons in *Holland* and *England*. There is no way as yet found ſucceſsful to propagate this Plant, but from Seeds; which being never produc'd in theſe cold Countries, and but rarely brought from abroad, is the Reaſon it is not very common in the *European* Gardens at preſent.

This is preſerv'd in Pots of freſh light Earth, and placed in a Stove in Winter, where it may be kept in a moderate Warmth, and muſt be frequently refreſhed with Water, with which Culture the Plants will thrive very well; but I have not ſeen them produce any Flowers as yet in *England*, though there have been ſeveral pretty old Trees in the Gardens at *Hampton-Court*, when the Exotic Plants were kept up there.

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Artichoke. See *Cinara*
Artichoke of *Jeruſalem*. See *Helianthus*
Aſarabacca. See *Aſarum*
Aſh. See *Fraxinus*
Aſh, the Mountain. See *Sorbus*
Aſhes
Aſparagraſs, or Sparrowgraſs. See *Aſparagus*
Aſpen-tree. See *Populus*
Aſphodel. See *Aſphodelus*
Aſphodel, the *African*. See *Bulbine*
Aſphodel-lily. See *Hemerocallis* and *Crinum*
Avens. See *Caryophyllata*
Avenue
Avocado pear. See *Perſea*
Ax vetch. See *Securidaca*
Azarole. See *Meſpilus*

B

BALM of *Gilead*. See *Dracocephalon*
Balm of *Gilead* Fir. See *Abies*
Balſam of *Capevi*. See *Copaiba*
Balſam-tree. See *Terebinthus*
Balſamine. See *Balſamina*
Balſam-apple. See *Momordica*
Bamboo-cane. See *Arundo*
Banana. See *Muſa*
Baneberries. See *Chriſtophoriana*
Barbados Cherry. See *Malpighia*
Barbados Flower-fence. See *Poinciana*
Barberry. See *Berberis*
Barley. See *Hordeum*
Barley, the naked. See *Triticum*
Barrenwort. See *Epimedium*
Baſil. See *Ocymum*
Baſil, the Stone. See *Acinos*
Baſon
Baſtard *Acacia*. See *Robinia*
Baſtard-dittany. See *Pſeudodictamnus*
Batchelors-button. See *Lychnis* and *Cyanus*
Batchelors-pear. See *Solanum*
Baulm. See *Meliſſa*
Baulm, the *Molucca*. See *Molucca*
Baulm, the *Turky*. See *Dracocephalon*
Bay. See *Laurus*
Bay of *Alexandria*. See *Ruſcus*
Bay, the Cherry. See *Padus*
Bay, the *Indian*. See *Myrtus*
Bay, the Roſe. See *Nerium* and *Chamærhododendron*
Bay, the ſweet-flowering. See *Magnolia*
Bead-tree. See *Azederach*
Beam, the hard, or Hornbeam. See *Carpinus*
Beam-tree, the White. See *Crategus*
Bean. See *Faba*
Bean, the Bog, or Bugbean. See *Menianthes*
Bean, the Kidney, or *French*. See *Phaſeolus*
Bean, Caper. See *Fabago*
Bean, Trefoil. See *Cytiſus*
Bean-tree. See *Corallodendron*
Bean, the Kidney-bean-tree. See *Glycine*
Beard, the Old Man's. See *Clematis*
Bear's-breech. See *Acanthus*

Bear's-ear. See *Auricula*
Bear's-ear Sanicle. See *Cortuſa* and *Verbaſcum*
Bears-foot. See *Helleborus*
Bedinjan, or Pottle-John. See *Melongena*
Bedſtraw, our Lady's. See *Gallium*
Bee-flower. See *Orchis*
Beech-tree. See *Fagus*
Beet. See *Beta*
Bell-flower. See *Campanula*
Bells, the *Canterbury*. See *Campanula*
Bells-hair. See *Hyacinthus*
Bell-flower, the Peach-leav'd. See *Campanula*
Bell-flower, the Steeple. See *Campanula*
Bell-pepper. See *Capſicum*
Belly-ach-weed. See *Ricinoides*
Belmuſk, or Abelmoſk. See *Ketmia*
Benjamin-tree. See *Laurus*
Bennet-herb. See *Caryophyllata*
Berberry. See *Berberis*
Betony. See *Betonica*
Betony, *Paul's*. See *Veronica*
Betony, the Water. See *Scrophularia*
Bethlehem Star. See *Ornithogalum*
Bifol, or Twyblade. See *Ophris*
Bilberry. See *Vaccinium*
Bindweed. See *Convolvulus*
Bindweed, the black. See *Tamnus*
Bindweed, the prickly. See *Smilax*
Birch-tree. See *Betula*
Birch-tree of *America*. See *Terebinthus*
Bird-cherry. See *Padus*
Birds-eye. See *Adonis* and *Primula*
Birds-foot. See *Ornithopodium*
Birds-foot Trefoil. See *Lotus*
Birds-neſt. See *Daucus*
Bird pepper. See *Capſicum*
Birthwort. See *Ariſtolochia*
Biſhops-weed. See *Ariſtolochia*
Bitter-ſweet. See *Solanum ſcandens*
Bitter-vetch. See *Orobus*
Bitter-wort. See *Gentiana*
Blackberry. See *Rubus*
Black-briony. See *Tamnus*
Blackthorn. See *Prunus*
Bladder-nut. See *Staphylodendron*
Bladder-nut, the *African*. See *Royenia*
Bladder-nut, the Laurel-leav'd. See *Dodonæa*
Bladder-ſena. See *Colutea*
Blite. See *Blitum*
Blood-flower. See *Hæmanthus*
Bloodwort. See *Lapathum*
Blue-bottle. See *Cyanus* and *Hyacinthus*
Bolbonach, or White-ſatten. See *Lunaria*
Bombax. See *Goſſypium*
Borders
Borecole. See *Braſſica*
Borrage. See *Borrago*
Box. See *Buxus*
Box-thorn. See *Lycium*
Brake. See *Filix*.
Bramble. See *Rubus*
Brank-urſine. See *Acanthus*
Braſilleto. See *Pſeudo-ſantalum*
Bread, St. John's. See *Ceratonia*
Briar, the Sweet. See *Roſa*
Briar, the Wild. See *Roſa*
Briony. See *Brionia*
Briſtol-flower. See *Lychnis*
Brimſtone-wort. See *Peucedanum*
Brocoli. See *Braſſica*
Brook-lime. See *Veronica*
Broom. See *Geniſta*
Broom, the Butchers. See *Ruſcus*
Broom, the Green. See *Spartium*
Broom, the *Spaniſh*. See *Geniſta*
Broom, the White. See *Spartium*
Broom, Rape. See *Orobanche*
Brownwort. See *Scrophularia* and *Brunella*
Bruiſewort. See *Lychnis*
Buckſhorn, or Hartſhorn-plantain. See *Coronopus*
Buckſhorn-creſs. See *Naſturtium*
Buckthorn. See *Rhamnus*
Buckthorn, the Sea. See *Rhamnoides*

Buck-wheat. See *Fagopyrum*.
Budding. See *Inoculating*
Bugle. See *Bugula*
Bugloſs. See *Bugloſſum*
Bugloſs, the Vipers. See *Echium*
Bullace-tree. See *Prunus*
Bully-tree. See *Cainito*
Burdock. See *Lappa*
Burdock, the leſſer. See *Xanthium*
Burnet. See *Sanguiſorba*
Burnet-ſaxifrage. See *Tragoſelinum*
Butchers-broom. See *Ruſcus*.
Butter-bur. See *Petaſites*
Butterfly-flower. See *Orchis*
Butterwort. See *Pinguicula*
Button-tree. See *Platanus* and *Cephalanthus*
Button-tree of *Jamaica*. See *Conocarpus*

C

CABBAGE. See *Braſſica*
Cabbage, the Sea. See *Crambe*
Cabbage-tree. See *Palma*
Cabinet
Cadlock. See *Rapiſtrum*
Cajou. See *Anacardium*
Calabaſh. See *Melopepo*
Calabaſh-tree. See *Cuiete*
Calamint. See *Calamintha*
Calamint, the Water. See *Mentha*
Caltha, or Marſh-marigold. See *Populago*
Caltrops. See *Tribulus*
Calves-ſnout. See *Antirrhinum*
Cammock. See *Anonis*
Camomile. See *Chamæmelum*
Camphire-tree. See *Laurus*
Campion. See *Lychnis*
Candle-berry-tree. See *Myrica*
Candy-carrot. See *Myrrhis*
Candy-tuft. See *Thlaſpi*
Candy-tuft-tree. See *Thlaſpidium*
Cane, the Bamboo. See *Arundo*
Cane, the *Indian* flowering. See *Cannacorus*
Cane, the Dumb. See *Arum*
Cane, the Fiſhing-rod. See *Arundo*
Cane, the Sugar. See *Arundo*
Canterbury-bell. See *Campanula*
Caper. See *Capparis*
Caper, the Bean. See *Fabago*
Capons-tail-graſs. See *Gramen*
Caraway. See *Carui*
Cardinals-flower. See *Rapuntium*
Carline-thiſtle. See *Carlina*
Carlock. See *Raphaniſtrum*
Carnation. See *Caryophyllus*
Carnation, the *Spaniſh*. See *Poinciana*
Carob. See *Ceratonia*
Carrot. See *Daucus*
Carrot, the deadly. See *Thapſia*
Carrot, the Candy. See *Myrrhis*
Carrot, the ſcorching. See *Thapſia*
Caſſada, or Caſſavi. See *Manihot*
Caſſidony. See *Stæchas*
Caſſidony, the Mountain. See *Elichryſum*
Caſſidony, the Golden. See *Elichryſum*
Caſſioberry-tree. See *Caſſine*
Cataputia major. See *Ricinus*
Cataputia minor. See *Tithymalus*
Catchfly. See *Lychnis*
Caterpillers
Caterpiller-plant. See *Scorpioides*
Cat-mint. See *Cataria*
Cauliflower. See *Braſſica*
Cedar of *Bermudas*. See *Juniperus*
Cedar of *Carolina*. See *Juniperus*
Cedar, the Baſtard. See *Guazuma*
Cedar of *Libanus*. See *Larix*
Cedar of *Lycia*. See *Juniperus*
Cedar of *Phœnicia*. See *Juniperus*
Cedar of *Virginia*. See *Juniperus*
Cedar, the White. See *Cupreſſus*
Celandine. See *Chelidonium*
Celandine, the leſſer. See *Ranunculus*
Celeri. See *Apium*
Centaury. See *Centaurium*
Ceterach. See *Aſplenium*
Chamomile. See *Chamæmelum*
Charlock. See *Rapiſtrum*
Charvil. See *Chærophyllum*

Chaſte-

Chaſte-tree. See *Vitex*
Cheeſe-runnet. See *Gallium*
Cherry-tree. See *Ceraſus*
Cherry-bay. See *Padus*
Cherry of *Barbados*. See *Malpighia*
Cherry, the Bird. See *Padus*
Cherry-laurel. See *Padus*
Cherry, the Cornelian. See *Cornus*
Cherry, the *Portugal*. See *Padus*
Cherry, the Cowhedge. See *Malpighia*
Cherry, the Winter. See *Alkekengi* and *Solanum*
Cherry, the perfumed. See *Ceraſus*
Chervil. See *Chærophyllum*
Cheſtnut-tree. See *Caſtanea*
Cheſtnut, the Horſe. See *Hippocaſtanum*
Cheſtnut, the Scarlet Horſe. See *Pavia*
Chiches. See *Cicer.*
Chickling Pea. See *Lathyrus*
Chickweed. See *Alſine*
Chickweed, the Berry-bearing. See *Cucubalus*
Chives. See *Cepa*
Chocolate-nut. See *Cocoa*
Chriſtmas-roſe. See *Helleborus*
Chriſt's-thorn. See *Paliurus*
Chriſtopher-herb. See *Chriſtophoriana*
Cibouls. See *Cepa*
Cicely. See *Myrrhis*
Cinquefoil. See *Potentilla*
Cinquefoil Shrub. See *Potentilla*
Cinnamon. See *Laurus*
Ciſtus, or Rock-roſe. See *Ciſtus*
Ciſtus, the dwarf. See *Helianthemum*
Citron-tree. See *Citreum*
Citrul. See *Anguria*
Cives. See *Cepa*
Clary, the Garden. See *Sclarea*
Clary, the wild. See *Horminum*
Climber. See *Clematis* and *Vitis*
Clivers. See *Aparine*
Cloud-berry. See *Chamæmorus*
Clover. See *Trifolium*
Clover, the Snail. See *Medica*
Clove Gilliflower. See *Caryophyllus*
Clowns Woundwort. See *Sideritis*
Coaſtmary. See *Balſamita*
Cob-nut. See *Corylus*
Coccygria. See *Cotinus*
Cockſcomb. See *Pedicularis*
Cockſcomb Amaranth. See *Amaranthus*
Cocksfoot-graſs. See *Gramen*
Cockſhead. See *Onobrychis*
Coco-nut. See *Coccus*
Codlin tree. See *Malus*
Codlins and Cream. See *Epilobium*
Coffee-tree. See *Jaſminum*
Cole-ſeed. See *Napus*
Colewort. See *Braſſica*
Colewort, the Sea. See *Convolvulus*
Colliflower. See *Braſſica*
Coloquintida. See *Colocynthus*
Coltsfoot. See *Tuſſilago*
Coltsfoot, the *Alpine*. See *Cacalia*
Columbine. See *Aquilegia*
Columbine, the feather'd. See *Thalictrum*
Comfry. See *Symphytum*
Comfry, the ſpotted. See *Pulmonaria*
Conſound, the great. See *Symphytum*
Conſound, the middle. See *Bugula*
Conſound, the leaſt. See *Bellis*
Conſound *Saracens*. See *Solidago*
Conſervatory. See *Green-houſe*
Conval-lily. See *Convallaria*
Coral-tree. See *Corallodendron*
Coriander. See *Coriandrum*
Cork-tree. See *Suber*
Corn-bottle. See *Cyanus*
Corn-flag. See *Gladiolus*
Corn-marigold. See *Chryſanthemum*
Corn-violet. See *Campanula*
Corn-ſallet. See *Valerianella*
Cornel-tree. See *Cornus*
Cornelian-cherry. See *Cornus*
Coſtmary. See *Balſamita*
Cotton. See *Goſſypium*
Cotton, the Silk. See *Ceiba*
Cotton-weed. See *Gnaphalium*
Couch or Dog-graſs. See *Gramen*
Coventry-bells. See *Campanula*
Cowl, the Friers. See *Ariſarum*
Cowſlip. See *Primula*

Cowſlip of *Jeruſalem*. See *Pulmonaria*
Cows-lungwort. See *Verbaſcum*
Crab-tree. See *Malus*
Craneſbill. See *Geranium*
Creſs. See *Naſturtium*
Creſs, the *Indian*. See *Acriviola*
Creſs, the Sciatica. See *Iberis*
Creſs, the Swines. See *Naſturtium*
Creſs, the Water. See *Siſymbrium*
Creſs, the Winter. See *Siſymbrium*
Crimſon Graſs-vetch. See *Niſſolia*
Croſs-wort. See *Cruciata*
Croſs of *Jeruſalem*. See *Lychnis*
Crowfoot. See *Ranunculus*
Crow-garlick. See *Cepa*
Crow-flowers. See *Lychnis*
Crown Imperial. See *Corona Imperialis*
Cowſlip. See *Primula*
Cuckow-flower. See *Cardamine*
Cucumber. See *Cucumis*
Cucumber, the wild. See *Elateria*
Cudweed. See *Gnaphalium*
Cullion. See *Orchis*
Cumin. See *Cuminum*
Curran-tree. See *Ribes*
Cuſtard-apple. See *Guanabanus*
Cypreſs-tree. See *Cupreſſus*
Cypreſs, the Garden or Lavender Cotton. See *Santolina*
Cypreſs, the Summer. See *Chenopodium*

D

DAffodil. See *Narciſſus*
Daffodil-lily. See *Amaryllis*
Daffodil, the Sea. See *Pancratium*
Daiſy. See *Bellis*
Daiſy, the Ox-eye. See *Buphthalmum*
Dames-violet. See *Heſperis*
Dandelion. See *Dens Leonis*
Danewort, or Dwarf-elder. See *Sambucus*
Darnel. See *Lolium*
Darnel-graſs. See *Gramen*
Date-tree. See *Palma*
Date-plum. See *Dioſpyrus*
Day-lily. See *Hemerocallis*
Dead-nettle. See *Lamium*
Deadly-carrot. See *Thapſia*
Deadly-nightſhade. See *Belladona*
Devil in a Buſh. See *Nigella*
Devils-bit. See *Scabioſa*
Diers-broom. See *Geniſta*
Diers-weed. See *Luteola*
Dill. See *Anethum*
Diſtaff-thiſtle. See *Atractylis*
Dittander, or Pepperwort. See *Lepidium*
Dittany. See *Dictamnus*
Dittany, the Baſtard. See *Pſeudo-dictamnus*
Dittany, the White. See *Fraxinella*
Dock. See *Lapathum*
Doctor-Tinkar's-weed. See *Trioſteoſpermum*
Dodder. See *Epithymum*
Dogſbane. See *Apocynum*
Dogberry-tree. See *Cornus*
Dogs-graſs. See *Gramen*
Dogs-mercury. See *Mercurialis*
Dogs-tooth. See *Dens Canis*
Dogwood. See *Cornus*
Dogwood of *Jamaica*. See *Robinia*
Dogwood of *Virginia*. See *Laurus*
Dogs-ſtones. See *Orchis*
Dogs-tongue. See *Cynogloſſum*
Double-leaf, or Twyblade. See *Ophris*
Double-tongue. See *Ruſcus*
Doves-foot. See *Geranium*
Dragons. See *Dracunculus*
Dragon-tree. See *Palma*
Dragon, the wild, or Tarragon. See *Abrotanum*
Dropwort. See *Filipendula*
Dropwort, the Water. See *Oenanthe*
Ducks foot. See *Podophyllum*
Ducks-meat. See *Lenticula*
Dung
Dwale, or Deadly-nightſhade. See *Belladona*
Dwarf-bay. See *Thymelæa*
Dwarf-ciſtus. See *Helianthemum*

Dwarf-

Dwarf-almond. See *Perſica*
Dwarf-oak. See *Quercus*
Dwarf-trees

E

EARTH-NUT. See *Bulbocaſtanum*
Earth-peas. See *Lathyrus*
Earth-peas, the *African*. See *Arachis*
Edging
Eglantine. See *Roſa*
Elder-tree. See *Sambucus*
Elder, the dwarf. See *Sambucus*
Elder, the Marſh. See *Opulus*
Elder, the *Spaniſh*. See *Saururus*
Elecampane. See *Helenium*
Elm-tree. See *Ulmus*
Enchanters-nightſhade. See *Circæa*
Endive. See *Endivia*
Eryngo. See *Eryngium*
Eſculus. See *Quercus*
Eſpalier
Eternal-flower. See *Elichryſum* and *Xeranthemum*
Ever-green Honeyſuckle. See *Caprifolium*
Ever-green Oak. See *Ilex*
Ever-green Privet. See *Liguſtrum*
Ever-green Roſe. See *Roſa*
Ever-green Thorn. See *Meſpilus*
Everlaſting Pea. See *Lathyrus*
Eye-bright. See *Euphraſia*

F

FEATHERFEW. See *Matricaria*
Feather, the Princes. See *Amaranthus*
Fell-wort. See *Gentiana*
Felon-wort. See *Solanum*
Fences
Fennel. See *Fœniculum*
Fennel, the Hogs. See *Peucedanum*
Fennel-giant. See *Ferula*
Fennel, the ſcorching. See *Thapſia*
Fennel-flower. See *Nigella*
Fenugreek. See *Trigonella*
Fern. See *Filix*
Fern, the ſweet. See *Myrrhis*
Feverfew. See *Matricaria*
Feverfew, the Baſtard. See *Parthenium*
Fiddle-wood. See *Citharexylon*
Fiddle-dock. See *Lapathum*
Field-baſil. See *Acinos*
Fig-tree. See *Ficus*
Fig, the arched *Indian*. See *Ficus*
Fig, the *Indian*. See *Opuntia*
Fig, the infernal. See *Argemone*
Fig, *Pharaoh*'s. See *Muſa*
Fig, Marigold. See *Ficoides*
Figwort. See *Scrophularia*
Fingrigo. See *Piſonia*
Finochia. See *Fœniculum*
Fir tree. See *Abies*
Fir, the *Scotch*. See *Pinus*
Fi,r the Corn. See *Gladiolus*
Flag, the common. See *Iris*
Flag, the ſweet-ſcented. See *Acorus*
Flag, the yellow Marſh. See *Iris*
Flax. See *Linum*
Flax, the Toad. See *Linaria*
Fleabane. See *Conyza*
Fleabane, the *African*. See *Tarconanthus*
Fleawort. See *Pſyllium*
Flixweed. See *Eryſimum*
Flower-de-luce. See *Iris* and *Xiphion*
Flower-gentle. See *Amaranthus*
Flower-eternal. See *Xeranthemum*
Flower-everlaſting. See *Elichryſum*
Flower-fence. See *Poinciana*
Flower, the Four o'Clock. See *Jalapa*
Flower-ſun. See *Helianthus*
Fluellin. See *Veronica*
Fly-wort, or Catchfly. See *Lychnis*
Fools-ſtones. See *Orchis*
Fox-glove. See *Digitalis*
Fox-tail-graſs. See *Gramen*
Fountains
Framboiſe. See *Rubus*
French-cowſlip. See *Auricula*
French-honeyſuckle. See *Hedyſarum*

French-lavender. See *Stœchas*
French-marigold. See *Tagetes*
French-Mercury. See *Mercurialis*
French-wheat. See *Fagopyrum*
French-willow. See *Epilobium*
Friers-cowl. See *Ariſarum*
Fringe-tree. See *Chionanthus*
Fritillaria Craſſa. See *Aſclepias*
Fritillary. See *Fritillaria*
Fumatory. See *Fumaria*
Fumatory, the bulbous-rooted. See *Capnorchis*
Fumatory, the Bladder. See *Cyſticapnos*
Fumatory, the podded. See *Capnos*
Furz. See *Ulex*
Fuſtic-tree. See *Morus*

G

GALE, or Sweet-willow. See *Myrica*
Galingale. See *Cyperus*
Gall-oak. See *Quercus*
Garlick. See *Allium*
Garlick, the Crow or Wild. See *Cepa*
Gatton-tree. See *Cornus*
Gaule, or *Dutch* Willow. See *Myrica*
Gelder-roſe. See *Opulus*
Gentian. See *Gentiana*
Gentianella. See *Gentiana*
Germander. See *Chamædrys*
Germander-tree. See *Teucrium*
Germander, the Water. See *Scordium*
Gilliflower. See *Caryophyllus*
Gilliflower, the Queen's. See *Heſperis*
Gilliflower, the Stock. See *Leucoium*
Gill-go-by-ground. See *Glechoma*
Ginger. See *Zinziber*
Gladwin. See *Iris*
Glaſs-wort. See *Kali* and *Salicornia*
Glaſtenbury-thorn. See *Meſpilus*
Globe-daiſy. See *Globularia*
Globe-crowfoot. See *Helleborus*
Globe-amaranthus. See *Amaranthoides*
Globe-flower, or Bottle. See *Cyanus*
Globe-thiſtle. See *Echinopus*
Goats-beard. See *Tragopogon*
Goats-rue. See *Galega*
Goats-thorn. See *Tragacantha*
Goats-ſtones. See *Orchis*
Gold of Pleaſure. See *Myagrum*
Goldy-locks. See *Chryſocoma*
Golden-flower-gentle. See *Amaranthus*
Golden-cups. See *Ranunculus*
Golden-rod. See *Virga Aurea*
Gooſberry. See *Groſſularia*
Gooſberry of *Barbados*. See *Pereſkia*
Gooſberry, the *American*. See *Melaſtoma*
Gooſe-graſs. See *Aparine*
Gooſe-foot. See *Chenopodium*
Gorſe, or Furz. See *Ulex*
Gourd. See *Cucurbita*
Gourd, the bitter. See *Colocynthus*
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